**NHS Research Scotland (NRS) and Scottish universities Scottish Senior Clinical Fellowship Scheme 2019**

Applications are invited from outstanding early career clinical academics (medical or dental) for five-year tenure track senior research fellowships to be held in one of the five Scottish universities with Medical or Dental Schools.

The scheme aims to support outstanding clinical scientists in their transition to leadership and provides an attractive research-focussed entry point to a permanent clinical academic career in one of five excellent research environments. The Academy of Medical Sciences is assisting in this scheme and those appointed will be invited to join the Academy’s [Mentoring programme](https://acmedsci.ac.uk/grants-and-schemes/mentoring-and-other-schemes/mentoring-programme).

The scheme is funded by a partnership between the Chief Scientist’s Office, Scottish NHS Boards (which together support NRS) and the universities of Aberdeen, Dundee, Edinburgh, Glasgow and St Andrews. Please note that this will be the final round from current committed funding of this Fellowship scheme.

**Requirements**

All applicants should have:

* post-doctoral (PhD/MD) research experience
* a strong publication record in your discipline
* have won competitive research or fellowship funding prior to application

All applicants require support from the Head of the Medical/Dental School. Potential applicants are encouraged to make specific enquires of each of the partner universities (details provided in ‘Further Particulars’, below)

**How to apply**

Please review the ‘Further Particulars’ for details of how to make an application. Candidates are advised to review this information well in advance of the closing date. Shortlisted applicants will be invited to interview in Edinburgh on Friday 1 November 2019.

All applications must be received by 5pm on Monday 10 June 2019 via Universities Scotland by email to Heather Sloan ([heather@universities-scotland.ac.uk](mailto:heather@universities-scotland.ac.uk)).

Queries regarding eligibly should be directed to the potential host university.

**Closing date: 5pm on 10 June 2019**

**Pay scale**

Posts will be held on the clinical academic consultant scale (which is currently £80,653 – £107,170) and will commence on a date agreed with the host institution. (Commencement must be within six months of the interview date.)

**Equality and diversity**

We welcome applications from all sections of the community.

All five medical schools are committed to the Athena SWAN Charter principles and hold departmental awards to recognise their commitment to gender equality.

**Further Particulars**

**Detail of the Scheme**

The Scheme offers:

* five years of protected time in which to develop an internationally competitive research programme
* progression to a permanent clinical academic appointment, subject to satisfactory progress which should be formally assessed by the host university
* the flexibility to be appointed to the Scottish university most suited to the applicant’s interests
* independent mentorship organised by the Academy of Medical Sciences
* five years of support for a research assistant (£35K/year total salary costs), research consumables (£23K/year) and a contribution to the costs of one PhD student over the five year period (£60K)

Host institutions will be supportive of early career clinical academics who:

* have post-doctoral research experience subsequent to a research training period leading to a PhD or MD
* can demonstrate an exceptional record of discovery evidenced by high quality publications in their discipline
* have obtained competitive fellowship or research funding prior to application
* can present research proposals that are likely to lead to further high quality publications and external research funding, and which synergise with the institution’s research strategy
* will be eligible by October 2019 for independent clinical practice in Scotland

**How to apply**

**Step 1: Establish the University is supportive of your proposed application**

Potential applicants are encouraged as soon as possible to make specific enquires of each of the partner universities as applications **require** support from the Head of College/Dean/Head of School (as listed below) judged by applicants to best fit with their planned research programmes.

To make enquires please contact:

* **Aberdeen**: The Head of School of Medicine, Medical Sciences and Nutrition, University of Aberdeen, Polwarth Building, Foresterhill, Aberdeen, AB25 2ZD; Tel: 01224 437965; Email: [Medicine-HoS@abdn.ac.uk](mailto:Medicine-HoS@abdn.ac.uk) ; Website: [www.abdn.ac.uk](http://www.abdn.ac.uk)
* **Dundee**: Professor Rory McCrimmon, Interim Dean & Professor of Experimental Diabetes and Metabolism, The University of Dundee, Dundee, DD1 9SY, Tel: 01382 383135 Email: [r.mccrimmon@dundee.ac.uk](mailto:r.mccrimmon@dundee.ac.uk); Website: <https://www.dundee.ac.uk/>
* **Edinburgh**: Professor Moira Whyte, Vice-Principal and Head of College of Medicine and Veterinary Medicine, The University of Edinburgh, The Queen’s Medical Research Institute, 47 Little France Crescent, Edinburgh, EH16 4TJ; Tel: 0131 242 6561; Email: [moira.whyte@ed.ac.uk](mailto:moira.whyte@ed.ac.uk); Website: [www.ed.ac.uk](http://www.ed.ac.uk)
* **Glasgow**: Professor Dame Anna Dominiczak, Vice-Principal and Head of College, College of Medical, Veterinary and Life Sciences, The University of Glasgow, Wolfson Medical School Building, University Avenue, Glasgow, G12 8QQ; Tel: 0141 330 3362/2738; Email: [Anna.Dominiczak@glasgow.ac.uk](mailto:Anna.Dominiczak@glasgow.ac.uk); Website: <http://www.gla.ac.uk/colleges/mvls/>
* **St. Andrews**: Professor David Crossman, Dean of the Faculty of Medicine, University of St Andrews, Medical School, North Haugh, St. Andrews, Fife, KY16 9TF; Tel: 01334 463597; Email: [medical.dean@st-andrews.ac.uk](mailto:medical.dean@st-andrews.ac.uk); Website: [www.st-andrews.ac.uk](http://www.st-andrews.ac.uk/)

The university is most likely to be able to help you if you provide:

* A full CV
* A draft personal research plan statement
* A draft research plan

Details of the form of these documents is provided under step 2

**Step 2: Putting together your application**

Applications must consist of:

1. A letter of support from the Head of the host Medical/Dental School (an email is satisfactory).
2. A full CV detailing publications, grants/fellowships and CCT status.
3. A one-page statement of personal research plans. This should be a ‘big picture’ summary of where your research plans are going to take you and the field over the next 10 years, together with a frank assessment of which external funders may support the work.
4. A five-year research programme, written in the general format of a MRC project grant application but limited to five A4 pages (NB: there is no special form and the Je-S application system is not to be used) with up to two pages of supplementary data/appendices and one page of abbreviated literature references. This document should focus on what you and one Research Assistant would deliver over five years.
5. Details of three referees able to comment on your potential as a research leader.
6. A signed [Applicant Declaration form](file:///\\us-dc001\User%20Folders\Heather\Desktop\Applicant%20declaration%20form.pdf).

*Presenting a five-year research programme as part of your application*

General

This should be written in Verdana point 10 with margins of 2cm at the left, and 1.5cm on all other borders. Do not exceed page limits.

Proposal

In no more than five A4 sides describe a research programme that you and a Research Assistant could deliver in five years. This should be in a conventional ‘project grant’ format – Title; Application; Summary; Aims of the Project; Work Leading up to the Project; Research Plan; Justification of Resources Requested (please observe the ARRIVE guidelines where appropriate).

Additional material

You may submit one A4 side with (abbreviated) literature references needed for the project and up to two A4 sides for supplementary data/appendices

Applications may propose approaches that span the full range of biomedical research models. Nevertheless applicants are encouraged to include work employing human subjects or tissues wherever possible (ethical approval will be required before funds are released, so should be sought in parallel).

**Step 3: Submit your application**

Full applications must be received by email by 5pm on Monday 10 June 2019 to Heather Sloan at Universities Scotland via [heather@universities-scotland.ac.uk](mailto:heather@universities-scotland.ac.uk)

Please note that your application must be submitted as a **single** PDF document.

**Appointment process**

The Academy of Medical Sciences role will be limited to the undertaking of the peer review of your application and assistance with the panel meeting. The scheme partners have appointed an independent interview panel to recommend successful candidates. The panel is chaired by Professor Ian Hall (Professor of Molecular Medicine, Faculty of Medicine & Health Sciences, University of Nottingham).

The process is overseen through the Board for Academic Medicine which is chaired by Professor Sir Peter Rubin and the process run through the secretariat based at Universities Scotland.

Shortlisted candidates will be given at least two weeks’ notice of interview. The interview will be held in Edinburgh on Friday 1 November 2019.

**Terms and conditions**

Following receipt of recommendations from the interview panel, the host University will confirm an appointment to each successful candidate (three fellowships are available in the round, subject to application quality). It is anticipated that appointments will commence on a date agreed with the host institution subject to mutual agreement, and that these will be held at an appropriate point on the clinical academic consultant scale which is currently £80,653 – £107,170.

**Disclosure / protection of vulnerable groups scheme**

This post is subject to registration with the Protection of Vulnerable Groups (PVG) scheme. Employment in this post is conditional on the University receiving a satisfactory PVG scheme record/update certificate. The successful candidate will not be permitted to commence employment until this has been received. Information provided will be kept confidential and individuals will not be discriminated against unnecessarily due to non-relevant offending background. If you require further information regarding Disclosure & PVG, please refer to: [www.disclosurescotland.co.uk](http://www.disclosurescotland.co.uk).

**Application checklist**

|  |  |
| --- | --- |
| Requirement |  |
| Letter of support from Head of College/Dean/Head of School | □ |
| Full CV | □ |
| One page ‘big picture’ statement of research plans | □ |
| Five page research programme | □ |
| Signed [Applicant Declaration form](file:///\\us-dc001\User%20Folders\Heather\Desktop\Applicant%20declaration%20form.pdf) | □ |
| Details of 3 referees | □ |

**The Universities reserve the right to vary the candidate information or make no appointment at all. Neither in part, nor in whole does this information form part of any contract between any of the Universities and any individual.**

**Opportunities in the five universities**

Aberdeen

The School (<https://www.abdn.ac.uk/smmsn/index.php>) encompasses all of the disciplines that underpin today’s medicine, including biomedical sciences, health sciences, nutrition and medical, medical science and dental education and these are organised into five Institutes.  The largest school in the University, the SMMSN has five Institutes: the Institute of Medical Sciences (IMS), the Institute of Applied Health Sciences (IAHS), the Rowett Institute, the Institute of Education in Medical and Dental Sciences (IEMDS) and the Institute of Dentistry, comprising all of our undergraduate and postgraduate programmes and our own graduate entry Dental School.

Staff are line managed and research opportunities are supported through our institutes which work together in an integrated and coordinated way to deliver research and teaching across the School, details of which can be found on their websites as below.

* The Institute of Applied Health Sciences <https://www.abdn.ac.uk/iahs/>
* The Institute of Medical Sciences <http://www.abdn.ac.uk/ims/>
* The Rowett Institute <http://www.abdn.ac.uk/rowett/>
* The Institute of Education for Medical and Dental Sciences <https://www.abdn.ac.uk/iemds/>
* The Institute of Dentistry <https://www.abdn.ac.uk/dental/>

Within the IMS, our scientists are working towards the creation of effective therapies for patients with a range of debilitating and life-threatening conditions.  Current research areas include: arthritis and musculoskeletal medicine; cell developmental and cancer biology; immunity, infection and inflammation; metabolic and cardiovascular health; microbiology and translational neuroscience.

Within the IAHS, research is focused on improving health and health care delivery.  It is home to a multidisciplinary grouping of around 100 university academic staff who conduct population and clinically-orientated health research and hosts the Health Services Research Unit [(HSRU)](http://www.abdn.ac.uk/hsru/) and Health Economics Research Unit [(HERU)](http://www.abdn.ac.uk/heru/), both funded by the Chief Scientist’s Office (CSO) of the Scottish Government.

As well as being the organisational home to the teaching scholarship staff and responsible for oversight of the UG and PGT programmes offered by the School, the IEMDS promotes and supports excellence in medical education through research and development, with a focus on conceptually and theoretically robust research and development which has strong potential for reaching international recognition.

The Dental Institute runs an undergraduate BDS programme and a growing suite of masters programmes for professional development.

We have a number of specialist Centres representing areas of particular research strength and capacity within the School all of which are willing to support colleagues on projects in their areas.  More information is available at the following websites.

The Centre for Healthcare Education Research and Innovation (<https://www.abdn.ac.uk/acdc/>)

The Centre for Health Data Science (<https://www.abdn.ac.uk/achds/>)

The Aberdeen Cardiovascular & Diabetes Centre (<https://www.abdn.ac.uk/acdc/>) and

The Aberdeen Centre for Arthritis and Musculoskeletal Health (<https://www.abdn.ac.uk/acamh/>)

The School is home to over 800 staff and 2000fte students.  It is located on the Foresterhill site, shared with our main clinical partner, NHS Grampian, with whom we work in close collaboration at primary and secondary care levels.  This is one of the largest integrated healthcare delivery, training and research sites in Europe and has rich assets including state-of-the-art academic (research and teaching) and clinical buildings.  Excellent infrastructure is also provided through core facilities for biomedical science including flow cytometry, proteomics, microscopy and genome sequencing, support for data health science projects and clinical trials.

The University works very closely with the NHS R&D office and has a common research governance framework, to ensure that the same supportive structures are in place wherever clinical research is undertaken. An accredited tissue-bank, Grampian Biorepository, is supported by NHS R&D who also jointly support the Grampian Data Safe-Haven which provides Health Informatics expertise. A fully registered Clinical Trials Unit (CHaRT) with particular expertise in surgical and device trials is highly productive. We are actively fostering opportunities for clinical academic career development at the level of senior lectureship in each of our key areas of research strength in our new research strategy. At earlier levels, we are putting more resource into building the academic careers of our increasing numbers of Scottish Clinical Research Excellence Development Scheme (SCREDS) lecturers and have strengthened the Aberdeen Clinical Academic Training scheme (ACAT <http://www.abdn.ac.uk/smmsn/acat/>).

REF2014 identified the outstanding quality of the impact of our work on practice with 83% assessed as 4\* and 17% as 3\*.

The last major academic capital development was the opening of the Rowett Institute, occupied in March 2016, whose staff undertakes nutrition research to help improve people’s lives through the prevention of ill-health and disease.  Their new £40M building has provided the University of Aberdeen with a facility with unique capabilities for human nutrition and metabolic research. Currently, the NHSG is carrying out an exciting £164 million building development creating The Baird Family Hospital and The Aberdeen and North Centre for Haematology, Oncology and Radiotherapy (ANCHOR) Centre Project, scheduled for completion in 2021/22.

**Dundee**

Biomedical research in the University of Dundee is based in the Schools of Medicine and of Life Sciences which work closely together to integrate research in clinical and basic science. This has resulted in new capital builds and infrastructure, joint appointments, joint planning of research programmes and joint PhD programmes. Research in the School of Medicine is based primarily in the Ninewells Campus, while that in Life Sciences is on the city campus. The range of research interests, and the major research facilities across the Schools outlined below, allows Dundee to offer an ideal opportunity for ambitious clinical academics to develop an independent research career in a highly supportive environment. The strength of biological science research in Dundee was recognised in the REF 2014 outcomes, with the submission being first in the UK for the quality of its research outputs and environment; the impact of clinical research was also rated first in the UK. Life Sciences and Medicine have major support from the Medical Research Council; the Wellcome Trust; Cancer Research UK; and the British Heart Foundation.

The **School of Life Sciences** (<http://www.lifesci.dundee.ac.uk/research/>) incorporates the Wellcome Trust Centre for Gene Regulation and Expression, the Scottish Institute for Cell Signalling, the MRC Protein Phosphorylation Unit, CRUK Nuclear Acid Structure Research Group and the Drug Discovery Unit. There are major strengths in molecular parasitology; the understanding of cell signalling and protein phosphorylation in the identification of potential novel drug targets; and in the application of mathematical modelling to aid a more complete understanding of biological systems. The new £35M Discovery Centre opened in 2014, with outstanding new facilities to support the research programmes of within the College, and houses a new advanced centre for proteomics, offering major opportunities for applied clinically relevant research.

Research within the **School of Medicine** (<http://medicine.dundee.ac.uk/research-1>) is carried out in newly built and refurbished state of the art laboratories, which include core facilities for cytology, microscopy and genomics. There has been substantial recent investment in facilities to support microscopy; sequencing; and advanced biomarker analysis; core facilities are managed in an integrated manner with the School of Life Sciences. Translational clinical research is strongly supported by the **Tayside Academic Medical Sciences Centre**, which is a joint development between the University of Dundee and NHS Tayside, and is part of the Academic Health Science Partnership in Tayside. This supports high quality research facilities in a purpose built Clinical Research Centre which houses an integrated Imaging Research Centre providing clinical, pre-clinical and molecular imaging (MRI/fMRI, PET/CT) on a single site. The adjacency of these facilities with a major teaching hospital (Ninewells) and the newly commissioned laboratories positions Dundee at the heart of major Scottish initiatives in translational research. The research complex houses the unique Institute of Medical Science and Technology, which has an international reputation for research into novel applications of ultrasound and interventional imaging. The research infrastructure includes a UK registered Clinical Trials Unit and coordinates all research permissions and governance issues.

**Health informatics** and **Precision Medicine** are major themes of clinical research in Dundee, targeted at using ‘big data’ to improve the health of individuals and society. Significant internal investment was made in 2012-3 to enhance the Health Informatics Centre capacity and this has been associated with major external funding for the Farr Institute, which is led jointly by the University of Dundee and partners, with the Farr Institute at Dundee being one of the two significant Scottish nodes with new infrastructure. The MEMO programme provides leadership in the development of novel design for large scale clinical trials.

Dundee hosts a large array of data sets including both national and comprehensive regional data on ~1M people (<https://www.dundee.ac.uk/hic/datalinkageservice/datasetinventory/>). Key strengths include more than 30 years of prescription encashment data and routinely collected imaging data on our bioresrouce populations. Dundee is world leading in diabetes informatics, with the now national Scottish Care Information Diabetes Collaboration (SCI-Diabetes) electronic medical record system originating in Tayside. The Scottish Diabetes Research Network (Lead McCrimmon, Dundee) hosts all clinical data for research use on ~250,000 patients. Dundee also hosts large bioresources of consented patients, with DNA, biosamples and extensive linkage to comprehensive electronic medical records. We consider the availability of genetic and other biomarker data the perfect bridge between health and biomedical informatics, enabling both forward (from molecule to patient) and reverse translation (from patient to molecular biology).

In Tayside, Scotland (population 400,000) we have established the scientific value of integrating comprehensive Electronic Medical Records from a highly sophisticated regional health informatics infrastructure with large consented bio-resources. We have assembled record linked bio-resources that comprise over 70,000 individuals (15% of the Tayside population) which includes disease-centred studies of diabetes, COPD, heart failure and asthma, but also includes population and family based resources (Generation Scotland-Scottish Family Health Study) and have established the use of population based pre-consent for the retention and research on clinical left over blood samples (GoSHARE) (see <http://medicine.dundee.ac.uk/tayside-bioresource>). This has allowed us to incorporate genomic information in the stratification of clinical phenotypes including drug response disease susceptibility and rate of disease progression.

Diabetes/ Endocrinology and Cardiology are major research strengths in Dundee. Dundee hosts a broad programme of translational research in Diabetes from bench to bedside and back again. Dundee has been in the top 4 of Diabetes UK funded research every year since 2010, and has received more financial research support that the rest of Scotland combined. Dundee has had more RD Lawrence Lectures awarded by Diabetes UK than any other UK institute. Opportunities are available in areas such as protein phosphorylation, insulin signaling, oxidative stress, hypothalamic regulation of glucose and energy metabolism, multiple endocrine neoplasis, non-alcoholic fatty liver disease, clinical studies of insulin action and hypoglycaemic responses and hypoglycaemia awareness, as well health informatics and precision medicine. Research in Cardiology covers a spectrum from the basic science of protein palmitoylation, oxidative stress, ischaemia reperfusion and vascular function to the repurposing of old drugs for use in the clinical management of resistant hypertension and cardiac failure.

Cancer research at Dundee is among the best in the UK.

An extensive portfolio of Cancer Research ranges from molecular cell biology and drug discovery to population screening, with Dundee leading the Scottish bowel cancer screening programme. There are 5 major programmes funded by CRUK within the purpose built Jacqi Wood Cancer Centre. This supports all of the laboratory aspects of cancer research and the translational work that is the core of the new developments. The same environment houses the Dermatology and Genetic Medicine group, which is a Wellcome Trust centre aimed at understanding the genetic and molecular basis of skin disease; and which works alongside a CRUK programme funded group with an international reputation in skin cancer.

The University of Dundee also hosts the **Centre for Antimicrobial Resistance.** The Centre for Antimicrobial Resistance at the University of Dundee brings together biologists, chemists, physicists, clinicians, mathematicians, epidemiologists, engineers and designers to focus on innovation in tackling antimicrobial resistance. Members of the Centre are located across the institution in the School of Life Sciences Research, the School of Medicine, the School of Engineering, Mathematics and Physics, the School of Computing, Duncan of Jordanstone College of Art & Design and NHS Tayside. Researchers within the Centre work on a variety of areas such as identifying targets for new therapeutic agents through basic research; developing innovative technologies for application in AMR research, driving leadership in antibiotic stewardship and performing drug discovery programmes to develop new antimicrobial agents. Much of the work of the Centre is carried out in multidisciplinary collaborations between different groups within Dundee and beyond. The Centre also links into the Academic Health Science Partnership in Tayside (AHSP), which brings together University of Dundee and NHS Tayside to improve the health of the population in Tayside and beyond through advancement of health research, education of healthcare professionals and improved quality & safety of healthcare services.

**Edinburgh**

The University of Edinburgh (UoE) College of Medicine and Veterinary Medicine (<http://www.ed.ac.uk/schools-departments/medicine-vet-medicine>) offers rich opportunities for clinical academic career development at the Senior Fellowship level. The high quality of the research environment is evident from many parameters (e.g. in REF 2014 we ranked 4th equal in the UK on research power in Clinical Medicine; in Neuroscience we were again ranked 4th in the UK on research power). Overall, 84% of the College’s research activity was rated world leading or internationally excellent (3\* and 4\*) from the 447 FTE staff returned. Edinburgh is ranked 19th in the world for Clinical, Pre-Clinical Medicine and Health (Times Higher ranking position in 2019) and is consistently a “World Top 20” university.

Our research approaches range from molecules to man, from bench to bedside and from process to population. We have pursued a strategy of interdisciplinarity and integration of basic, clinical and social sciences in our research centres, schools and institutes. To address big questions in biomedical research we embrace innovation and bring the power of physical sciences - for example chemistry, physics, informatics and engineering - to biomedical problems. To embed our research in the community we link biomedical researchers with social scientists in law, ethics, and governance, and work to a University-wide strategy for public engagement.

The academic disciplines within the Edinburgh Medical School are largely concentrated in the two teaching hospital campuses, the Royal Infirmary at Little France and the Western General Hospital. Both have extensive new infrastructure with major research institutes and state of the art research facilities on clinical sites. We have nearly 3,000 undergraduate students in medicine and biomedical sciences and over 2,500 postgraduate students on campus and online. We are delighted that all three Deaneries within the Edinburgh Medical School now hold silver Athena Swan awards.

Edinburgh hosts many prestigious externally-funded Research Centres including the MRC Human Genetics Unit, the largest MRC Unit in the UK which has had a recent outstanding quinquennial review, and MRC Centres in, Regenerative Medicine <http://www.crm.ed.ac.uk>, and Reproductive Health <http://www.ed.ac.uk/centre-reproductive-health>. Edinburgh also has a CRUK Cancer Centre and British Heart Foundation Centres of Research Excellence and of Vascular Regeneration. The Centre for Genomics & Experimental Medicine hosts anMRC Molecular Pathology Node. Edinburgh also contains the Usher Institute for Population Health Sciences and Informatics, which hosts the Scotland node of Health Data Research UK. Edinburgh Neuroscience is one of the Centres of the MRC’s UK Dementia Research Institute. Other recent developments in neuroscience include the £10M Anne Rowling Centre for Regenerative Neurology and a recent £20M award for the Simons Initiative in the Developing Brain.

Our strategy is underpinned by long-term investments. Over the last 15 years, we have invested over £350M in new infrastructure in our campuses. A new £60M Institute for Repair and Regeneration based at Little France will open in 2020, allowing co-location of researchers from the MRC Centre for Inflammation Research and the MRC Centre for Regenerative Medicine. Moreover, since 2008 we have appointed over 70 medical clinicians to run-through academic training posts, largely funded by a flagship Wellcome Clinical PhD Scheme. Since 2012, we have appointed more than 100 outstanding new tenure-track, early career ‘Chancellor’s Fellows’ (CFs) in relevant disciplines of biology, medicine and humanities.

**Clinical Research Infrastructure**

**Edinburgh Imaging** The University of Edinburgh has well developed international expertise in magnetic resonance imaging of brain and body. Edinburgh Imaging houses [Scotland's first PET-MRI](http://www.ed.ac.uk/clinical-sciences/edinburgh-imaging/news/01-aug-16-new-mr-pet-arrives) scanner, the Siemens Biograph mMR. We also house the Siemens Magnetom Verio 3T MR scanner and two 128-multidetector PETCT scanners currently performing FDG-imaging. Our PET scanners are served by the GMP Radiochemistry department, which includes a dedicated Cyclotron (PETtrace 8, GE Healthcare) with a supporting Radiochemistry suite accredited by the MHRA.

**The Wellcome Trust Clinical Research Facility**([www.edinburghcrf.ed.ac.uk/)](https://www.edinburghcrf.ed.ac.uk/)is an outstanding environment for clinical research, acknowledged nationally, and reported as an exemplar by the Academy of Medical Sciences. It provides state-of-the-art facilities and an optimal environment for the conduct of clinical research. It employs over 60 members of staff. The facility has several Core areas including integrative physiology, genetics, mass spectrometry, statistics, image analysis and education as well as the Experimental Cancer Medicine Centre.

**Edinburgh Clinical Trials Unit** fulfils both clinical research governance and trial design and support.

Since the University hosts the Edinburgh Postgraduate Dental Institute, dental candidates could also be accommodated. Thus, the University can provide an ideal research environment for clinicians from the vast majority of disciplines.

**Glasgow**

The University of Glasgow’s world class clinical research environment was ranked joint first in Scotland in REF2014 and provides exceptional infrastructure and support to those interested in developing an independent clinical academic career (overall, our clinical medicine ranked 6th in the UK and 2nd in Scotland). The **College of Medical, Veterinary and Life Sciences (**<http://www.gla.ac.uk/colleges/mvls/>) is home to over 2,300 staff, has an annual turnover exceeding £205M and over £128M of research income in 2017/18 including major research programmes supported by the MRC, BBSRC, and charities such as the Wellcome Trust, CRUK and the BHF. The College offers a unique environment where life scientists and clinicians work side-by-side and our collaborative, interdisciplinary approach means we can study processes at every level of their biological organization, from genes, to cells, organs, individuals and populations. This multidisciplinary approach is highly successful: 15% of our publications are amongst the top 5% most cited globally (placing us 3rd in the Russell Group for field weighted citations). Our internationally excellent clinical research impacts widely across the UK and internationally to improve human health, quality of life and the competitiveness of the UK economy.

The University of Glasgow has invested heavily in new biomedical research infrastructure. State-of-the-art laboratories for cancer research complement new clinical facilities (including extensive resources for clinical trials) within the new **Beatson Oncology Centre**; the £20M **Wolfson Wohl Translational Research Centre** houses world-leading clinicians and scientists working to transform scientific advances in the lab into real benefits for patients; the **Glasgow Biomedical Research Centre** and the adjacent **BHF Centre of Excellence in Vascular Science and Medicine** provide comprehensive facilities for molecular, cellular, physiological and clinical research studies across a range of key academic disciplines. The Wellcome Trust-supported **Glasgow Polyomics Facility** provides expertise in the application of genomic, transcriptomic, proteomic and metabolomic technologies to any biological system. The **Arthritis Research UK Rheumatoid Arthritis Pathogenesis Centre of Excellence**, led by Glasgow with the Universities of Newcastle and Birmingham makes use of our collective expertise to understand the mechanisms behind this disease and how we can use this knowledge to develop more effective treatments. The Medical Research Council and the University have jointly invested £38M in the **MRC - University of Glasgow Centre for Virus Research**, creating the UK’s largest grouping of virologists. The University is also jointly investing £45M in the **MRC/CSO Social and Public Health Sciences Unit** providing world class facilities and data linkage capabilities for our leading edge research into social, behavioural, economic, cultural and environmental influences on health.

The **Queen Elizabeth University Hospital** (QEUH) represents an investment to Glasgow and Scotland in the region of £1Billion. Opened in 2015, the hospital is the largest acute hospital in Western Europe and includes maternity, paediatric and adult services on a single site. The College has invested over £70M in new physically-linked facilities at the Queen Elizabeth University Hospital which include:

* A £25M purpose-built **Learning & Teaching Centre** for medical training;
* The £32M **Imaging Centre of Excellence**, incorporating the UK’s first 7T MRI scanner in a fully integrated clinical site
* The **Stratified Medicine Scotland Innovation Centre**, a Glasgow-led, Scotland-wide collaboration with industry and the NHS aimed at developing precision medicine and providing leadership for Scotland’s Precision Medicine Ecosystem
* A £5M **Clinical Research Facility** for precision medicine clinical trials in adults, adolescents and children.
* A 22, 000sq ft. industry-focused, **Clinical Innovation Zone** providing access to the University’s internationally renowned researchers in state-of-the-art facilities home to the University of Glasgow-led, industrial-Centre for Artificial Intelligence Research in Digital Diagnostics (iCAIRD), a 15 partner consortium including NHS, academia and industry e.g. Canon Medical and Philips.

Co-located in a purpose built Laboratory Medicine Building at QEUH, the UK’s largest (£3.4M) **MRC-EPSRC funded Molecular Pathology Node** is enabling scientists, pathologists and clinicians to be trained and to collaborate with our industry partners to develop new diagnostic tests. These facilities place Glasgow at the forefront of driving precision medicine forwards for the UK and internationally.

The University of Glasgow and NHS Greater Glasgow & Clyde recently cemented their long-standing relationship through the formation of the Glasgow Health Sciences Partnership (GHSP). GHSP supports clinical research by enabling access to the patient base of NHS Greater Glasgow & Clyde and through a wider West of Scotland Network, the surrounding health boards of the West of Scotland. GHSP supports access to an NHS patient base of 2.8million (52% of the Scottish population) and includes areas of significant health inequalities and high incidence of premature chronic disease and comorbidities. The infrastructure available through this partnership includes: the **Robertson Centre for Biostatistics** (with an international reputation for clinical trials, epidemiology and health economics); state of the art clinical research facilities; a biorepository; and, through the NHS ‘Safe Haven’ and the Farr Institute, the ability to readily access high quality data via the Community Health Index (CHI). The University’s clinical research income exceeds £21.5M annually, from a portfolio of around 1,500 active clinical studies with approximately 17,000 patients recruited to clinical trials across a broad range of disease areas.

The quality of our research in clinical medicine was confirmed by REF2014, which cemented our world-class reputation for studies into cancer, cardiovascular, and immune and inflammatory diseases with over 80% of our return being assessed as internationally excellent or world-leading. Specific research strengths are under-pinned by our cross-disciplinary ethos and our clinical research benefits from expertise in public health, health economics, epidemiology, biostatistics and bioinformatics, as well as excellence in basic biomedical science. These academic research strengths offer extensive opportunities for new academic Clinical Senior Lectureships.

The College includes seven interdisciplinary Research Institutes (<http://www.gla.ac.uk/colleges/mvls/researchinstitutes/>) and three Schools (<http://www.gla.ac.uk/colleges/mvls/schools/>). The Institutes and School where aspiring clinical fellows are most likely to find mentors are shown below in bold.

* **Institute of Cancer Sciences**
* **Institute of Cardiovascular and Medical Sciences**
* **Institute of Infection, Immunity and Inflammation**
* **Institute of Health and Wellbeing**
* **Institute of Neuroscience and Psychology**
* Institute of Molecular, Cell and Systems Biology
* Institute of Biodiversity, Animal Health and Comparative Medicine
* **School of Medicine, Dentistry & Nursing**
* School of Life Sciences
* School of Veterinary Medicine

The University of Glasgow is committed to developing a critical mass of clinical fellowships and invests through pump-priming initiatives and mentorship programmes. Our world-class research environment combines complete integration of clinical and academic practice, and we are confirmed international leaders in cancer sciences; cardiovascular and medical sciences; Infection, Immunity and Inflammation and public health. Opportunities for clinical academic career development at the level of senior lectureship exist across all areas, including the leading and research-led Glasgow Dental School.

**St. Andrews**

Research in the St Andrews Medical School is based in the new state of the art building on the North Haugh (£45 m) built with the support of the Wellcome Trust, the University and benefactors. The Medical School is co-located with the Schools of Physics, Chemistry and the Biomedical Research Science Centre. This provides the opportunity to work with lead scientists of different disciplines and apply their methodologies to medical problems. The School has a vibrant research culture, supported by regular research meetings involving all staff and students, and much of the research activity is strongly interdisciplinary, involving for example the Schools of Physics and Biology. In September 2019 we will open the Sir James Mackenzie Institute for Early Diagnosis. This will have three research platforms, Data Science, Digital pathology and Biophotonics. A significant proportion of our research is undertaken in community settings in Scotland and more widely. Clinical trials modelling is performed in collaboration with the Schools of Applied Mathematics and Computing.

The Medical School works closely with health services locally in Lothian, Fife and Tayside, and also with colleagues throughout Scotland. There are very strong international links, including on-going research collaborations in Malawi and other sites in southern Africa.

**Infection** remains of central importance in medicine as the leading cause of premature death worldwide. Working with partners across Europe and with the NHS locally, researchers in the medical school focus the major health priority of the evolutionary biology of antibiotic resistance, seeking to understand the factors that drive resistance and the fitness barriers that organisms have to overcome. This includes basic laboratory experimentation and research in collaboration with health service partners. This work includes studies investigating the molecular biology of the evolution of infection and antibiotic resistance in neglected area such as catheter associated urinary tract infection. Infection group faculty are engaged in national and international collaborations with an extensive network of scientists and clinicians, including: Wellcome Trust Sanger Institute MRC Clinical Trials Unit, MRC Mill Hill , as well as the Universities of Cambridge University College London Imperial College London and University of London, St Georges. Our work on translational infection, based around a solid focus of infection genomics and bioinformatics, clinical trials and experimental biology of infection is cutting edge. Infection research provides translation opportunities for our basic science colleagues in other Schools, notably Chemistry, Biology and Physics. These links involve the harnessing of photonics methodologies to identify varying cell states in bacteria. The infection group is funded by the Wellcome Trust, the European Developing Countries Clinical Trials Partnership, the Chief Scientist Office (Scotland), and the Innovative Medicines Initiative.

Research into behaviour is championed by the Child and Adolescent Health Research Unit (CAHRU) and the School hosts the WHO Collaborating Centre for International Child & Adolescent Health Policy. Close links with health psychology provide a rich environment in which interventional studies on behaviour can be undertaken, with a strong international presence, including studies on addiction and psychosocial aspects of health. Work is funded by UK agencies, WHO and EU. There is also a strong theme that attempts the molecular dissection of genetic associations with cognitive phenotypes and neurodevelopmental disorders, using GWAS and in vivo models to dissect gene-behaviour interactions. This group has had considerable success in establishing novel sample collections through different clinical collaborators in the UK and overseas.

Systems and experimental medicine includes a strong interest in systems biology applications to medicine and the school chairs the EU funded Concerted Action on Systems Medicine Implementation in Europe (CASyM). Other funded priorities include ion channel biology and circulatory fatty acid and zinc dynamics. Using low-noise single-channel recordings, the laboratory is interested in the study of intracellularly located ion-channels that are involved in the control and regulation of Ca2+-release from intracellular stores. The release of calcium from specialised stores within the cell is essential for a diverse range of biological processes and if perturbed can lead to a plethora of disease states including heart failure and neurological disorders. Medical biophotonics and optigenetics interact with numerous other groups. There are excellent tissue culture facilities, lentivirus and other gene delivery systems, experience in use of CRISPR and flow cytometry. There is good support for microscopy and ultrastructure, including digital pathology, quantitative fluorescence, image analysis and quantitative electron microscopy.