UNIVERSITY OF LEICESTER

Job Summary

Job Title: NIHR Clinical Lecturer in Respiratory Medicine; Infectious Diseases; Clinical Genetics
Honorary Specialty Registrar (Available to ST3s and above)
Salary: Nodal 4 (ST3-ST5) £61,825; Nodal 5 £70,425 (ST6+) per annum, pro rata if part-time
Department: Appropriate Department/School within the College of Life Sciences
Hours/Contract: Full-time, part-time (minimum 0.7FTE, 28 hours per week), Fixed term contract for up to 4 years. Actual period of appointment defined by NIHR conditions; consideration may be given to a LTFT appointment which meets the NIHR criteria. Appointment to commence no later than 1 September 2025
Reference: 11508

Role Purpose

The post offers the opportunity for those with excellent potential as clinical academics to progress Specialist Training (Respiratory Medicine; Infectious Diseases; Clinical Genetics) whilst further developing their academic skills, and undertaking high quality research or developing medical education expertise. The scheme is intended to develop the lecturer into an independent principal investigator or educator who is able to apply competitively for a senior academic position in the future.

Balance of Duties

The CL will be offered entry at their appropriate stage of training into their chosen specialty training programme.

The successful applicant will spend 50% of their time undertaking academic duties (research and teaching) and 50% of their time undertaking clinical training/work. The way that this split is arranged can be managed very flexibly through liaison between the post holder, the academic supervisor and the clinical supervisory team. If required, the research can be undertaken in dedicated blocks where there is no (or minimal) clinical commitment to ensure that the CL has the opportunity to focus on their own academic work, as well as participate in the training opportunities within the Department, College and wider University. There are a significant number of training courses and sessions that the University provides for clinical academic staff, and the trainee will be expected to identify, in consultation with their academic and research supervisors, the courses that are necessary for their on-going professional development as an academic clinician.

Excellent clinical training will be provided for those requiring specialty training through the NHS England East Midlands training scheme. The key principle underlying this phase of training is that the balance of academic and clinical training will be agreed on an *ad personam* basis between the trainee's academic supervisor, the training programme director, and the SAC taking into consideration the level of training of the candidate at appointment.

Resources Managed

- Supervise junior research staff and research students as required
- Manage research income as required

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Job Summary

Main Duties and Responsibilities

Research (see appendix)

The appointee will be required to:

- To contribute in a significant and meaningful manner to the Department and College's profiles by producing academic outputs of the highest standard.
- Ability to establish and develop an excellent and distinctive independent academic portfolio.
- Ability to write up research findings in a timely fashion resulting in publications in high quality peer-reviewed journals.
- Ability to establish successful collaborations within and beyond Leicester to enhance the overall College academic portfolio.
- To secure, in collaboration with colleagues, as appropriate, external research funding relevant to their academic project(s) and future independent research area, which will deliver outputs of excellence
- To attend and present research findings and papers at academic and professional conferences, and to contribute to the external visibility of the department
- To ensure that all research activities undertaken are in compliance with the 'Research Code of Conduct' operated by the University.
- To undertake research student supervision

Teaching

The appointee will contribute to teaching appropriate to their expertise on the MB ChB and other undergraduate and postgraduate courses. The medical curricula are integrated, and the structure and content are the responsibility of a single Medical College Curriculum Committee. They are coordinated by the Leicester Medical School in consultation with academic departments. Staff may contribute to lectures, tutorials or practical work in either the core curricula or student selected Special Study Modules. In the case of the core curricula, staff will be responsible to a relevant Module Leader, who may not necessarily be based in the member of staff's own department, for the content and nature of their teaching.

Clinical Duties

This will be managed and delivered by NHS England (East Midlands), in accordance with the National training curriculum for the clinical specialty.
Details of the clinical training curriculums can be found at:
https://www.jrcptb.org.uk/specialties

Clinical training attachments will be fully approved training posts in the East Midlands rotation and mapped to the academic and clinical needs of the trainee.

If appointees are required to undertake out of hours work this will be managed in line with the terms and conditions of the resident doctors' contract.

Internal and External Relationships

- Coordination with central University offices as required.
- Delivery of research presentations at national/international conferences and meetings.
- Attendance and contributions to group and departmental meetings

- Liaison with collaborators within and outside the University of Leicester
- Seek guidance from academic, research, clinical and educational supervisors, administrative support staff and other academic colleagues as required

Supervision

Within the University the appointee will be responsible to their academic supervisor and ultimately to their Head of Department.

As part of the NIHR academic training scheme appointees from all specialties will have an academic supervisor and a research supervisor. The Director of the Clinical Academic Programme is responsible for ensuring that these supervisors are appointed and approved by the Clinical Academic Training Committee (CAT).

Those in specialty training will also have a clinical supervisor and an educational supervisor. The educational supervisor is appointed by NHS England, must have undertaken appropriate training and is responsible for specifying the trainee's pathway to Certificate of Completion of Training. In addition, the appointee will be responsible for their clinical duties to the Training Programme Director and Clinical Director/Head of Service.

Where an academic supervisor is also a trained educational supervisor, approved by NHS England, they may undertake a dual role. A research supervisor cannot act as an academic or educational supervisor

Planning and Organising

- Shaping the strategic direction of own area of activity, managing own time and leading the long-term planning and delivery of activity with respect to agreed priorities/projects with a view to applying for funding for a senior academic position
- Participation in the departmental operational planning process
- Supporting the strategic direction of the research group and department.
- Seek guidance from mentors, administrative support staff and other academic colleagues as required.

Person Specification

All candidates in specialty training must satisfy the clinical training person specification available at

https://specialtytraining.hee.nhs.uk/Recruitment/Person-specifications

in addition to the person specification for a clinical lectureship below:

Candidates in ID may undertake training as a Group 1 specialty with Medicine or a Group 2 Specialty with Medical Microbiology

Qualifications, Knowledge and Experience

Essential

- Basic medical degree, MB BS or equivalent*
- Full GMC registration *
- GMC Licence to practice*
- MRCP or equivalent

- Higher degree (MD, PhD or equivalent) in field related to this post. Candidates who have submitted for their higher degree at the time of application may be considered but must have been fully awarded prior to 31 August 2025*
- Evidence of achievement of Foundation competencies in line with GMC standards/Good Medical Practice Evidence of achievement of ST1 & ST2 competencies in medicine at the time of appointment (ARCP outcome 1 in ST1 and 2)*
- Hold an NTN in the required clinical specialty and have achieved an outcome 1 at the most recent ARCP, or have been through national recruitment and be regarded as appointable at ST3 or above in the clinical specialty and be able to provide formal evidence of this
- Have a minimum of one year's clinical training to complete at the time of commencement in ACL*
- Evidence of good progress in clinical training and that completion of specialty training may be accommodated either during or after the four-year period of the CL award*
- A coherent, high quality and feasible plan of research
- Demonstration of understanding and commitment to academic career*
- Indication of medium and long-term career goals*
- Demonstration of reasons for applying for this Clinical Lectureship Programme*
- Evidence of teaching experience* & the ability to teach undergraduates and postgraduates
- Publications in peer reviewed journals, with ability to meet REF requirements*

Desirable

- Evidence of commitment to specialty
- Intercalated honours degree and/or additional qualifications e.g. MSc etc
- Knowledge of the centre hosting the research and how this is best placed to support the research, education and training needs*
- Prizes or distinctions significant to this post*
- Presentation of work at a national or international meetings*
- Minimum of two 4* REF returnable publications*

Skills, Abilities and Competencies

Essential

- High level of proficiency in English, sufficient to undertake research, teaching and administrative activities utilising English Language materials and to communicate effectively with staff and students
- Area of research compatible with the interests of the College/Department*
- Publications in national or international peer reviewed Journals*
- Evidence of presentations to learned societies*
- Demonstration of the potential for scientific independence and the ability to lead a research team
- Demonstration of personal reasons for applying for this Clinical Lectureship Programme
- Evidence of potential to become a leader in chosen field
- Evidence of ability to work effectively & co-operatively as a member of a multi-disciplinary team
- Commitment to personal and professional development
- A high degree of motivation and personal self-discipline
- Organisational ability
- Capacity to prioritise own workload

- Able to initiate/innovate
- Effective written communication skills*
- Effective oral communication & spoken English skills

Criteria to be used in shortlisting candidates for interview

Other Requirements

- Satisfactory enhanced DBS disclosure
- Satisfactory occupational health clearance
- Meets professional health requirements (in line with GMC standards/Good Medical Practice)
- Medical defence cover
- Able to commence in post no later than 1 September 2025

Contract Information

This post is a fixed-term post & forms part of the integrated clinical/academic training programme. Funding is provided by NIHR for a maximum period of 4 years (full time), or until the post holder relinquishes their NTN whichever is the earlier, or until the end of an NIHR approved post CCT period.

Candidates must have a higher degree (MD/PhD, or equivalent), or have submitted their higher degree, at the time of application. The degree must be awarded prior to commencement. The post holder must be able to commence no later than 1 September 2025.

Specialty trainees will hold an NTN (a).

In line with NIHR guidance LTFT applications may be considered. Dependent upon the fte undertaken posts may be extended for a maximum of 6 years (equivalent to four years full time) and the academic component of the post must not fall below 0.33fte. Posts must also comply with guidance issued by the GMC with respect to LTFT academic trainees.

Should the appointee be due to attain CCT during the four-year funding period, an application may be made to NIHR for consideration to continue in post beyond CCT, to enable the individual to make the transition to research independence.

In making an application the following conditions must be met:

- Applications for extension must be made to NIHR at least 6 months prior to CCT.
- A trainee that wishes to apply for an extension must have more than 12 months remaining of their training at the time of appointment to the NIHR CL post. Trainees with less than 12 months to CCT will be considered ineligible.
- Except in exceptional circumstances, post-CCT CLs must reduce their clinical commitments to 2 clinical sessions per week, which should be sufficient to maintain clinical skills and remain appointable as an NHS consultant. Those employed in the craft specialties may seek permission within the extension request to undertake up to 4 clinical sessions per week.
- In giving consideration to an extension within the existing four-year funding period, NIHR may approve for a maximum of 24 months beyond CCT (including the grace period), or until the 4-year funding maximum is reached. For example, a CL who uses 3.5 years of the funding to reach CCT will be offered a 6-month extension (equivalent to the grace period).

Extensions are not automatically given; they are considered on a case-by-case basis and are not guaranteed to be granted.

Further details may be obtained from catenquiries@le.ac.uk

Should you not complete training to CCT during the period of this appointment the post will be reviewed to determine if the appointee is to transfer to an NHS StR post to complete their training, or if the academic post can be extended using local funding.

An honorary clinical ST contract will be sought from the University Hospitals of Leicester NHS Trust (http://www.leicestershospitals.nhs.uk/aboutus), or the hospital in which they are based on the training scheme, as appropriate.

Professional Requirements

You must be registered with the GMC, hold a licence to practice, abide by the codes of professional practice and have appropriate cover from a medical defence organisation for the duration of your appointment. Lapsing may render you subject to disciplinary action and you cannot be lawfully employed should registration lapse. You are required by the GMC to revalidate every five years. You must therefore advise the University of your revalidation dates and provide written evidence of your satisfactory revalidation where these fall within your period of employment with the University. You are also required to abide by the codes of professional practice as detailed by the professional body GMC.

It is a fundamental condition of employment for those in training that you hold and retain an honorary clinical specialty registrar contract with a recognised NHS Trust acceptable to the University for the duration of your employment. You must not commence work prior to this contract being awarded. The appointment with the University will automatically terminate should an honorary NHS contract be withdrawn or otherwise come to an end.

Appointees will be expected to engage in appropriate continuing professional development.

You will be required to comply with all NHS employment checks and satisfactorily meet these requirements prior to commencement in post. You are required to comply with the appropriate occupational health procedures for the post which you are to undertake. Where the post requires that you undertake Exposure Prone Invasive Procedures any offer of employment is subject to satisfactory clearance from the Trust Occupational Health department and you cannot commence in post until satisfactory clearance has been received. Where the post does not require Exposure Prone Invasive Procedures you must provide evidence of attendance at a Trust occupational health interview within the first 3 days of commencing in post.

Management of the Academic Programme

The academic programme is managed by the Clinical Academic Training (CAT) Operational Group & comprises members from the University, NHS Midlands and partner NHS Trusts. It is led by the Director of CAT, currently Dr Anvesha Singh. The Clinical Academic Training programme is responsible for annually reviewing the academic progression of the trainee to inform their ARCP.

Teaching Qualification

CLs with less than 3 years' experience of teaching in higher education are expected to complete the Postgraduate Certificate in Academic and Professional Practice within a reasonable timeframe of starting their employment with the University. CLs with more than 3 years' teaching experience, who do not already hold an Academic Teaching Qualification as defined by HESA such as teaching qualification (UK or International), or Fellowship of the Higher Education Academy, are expected to achieve the latter within a reasonable timeframe of starting their employment with the University. Fellowship of the Higher Education Academy can be achieved through the Experiential Route of the University's Professional Educational Excellence Recognition Scheme (PEERS).

Assessment and Appraisal

At the commencement of the academic placement the academic trainee must meet with their academic supervisor to ensure that an integrated and jointly agreed training programme/job plan is agreed, & at a minimum of six-monthly intervals thereafter, preferably more frequently, to review progress. Specialty trainees must also meet with their educational supervisors. The trainee will also have an induction meeting with the Director of the Clinical Academic Training Programme and the Administrative Manager for the programme. In addition, the appointee should meet regularly (at least bi-monthly) with their research supervisor.

The appointee will be required to attend an annual academic review & provide the required information to the review panel. These normally take place in May each year. The academic supervisor must ensure that a report on academic progress is submitted to the Director of Clinical Academic Training (CAT) at least 2 weeks prior to the review. Following the review, the Director of CAT will provide a letter of progression to inform the ARCP of academic progress. Documentation from the academic review & the Director's report will inform University probation. All appointees are required to comply with the University's PDD processes.

The ARCP will jointly assess academic and clinical progress and the outcome of the process will be recorded.

In the event that at the second year review it is evidenced that the appointee has been unsuccessful in developing an academic career a recommendation will be made for specialty trainees to join the standard clinical training programme.

Reason for Fixed Term Contract

The reason for the fixed term contract is stated in section 1.9 in the summary of contractual terms in your contract of employment.

Criminal Declaration and Disclosure and Barring Service (DBS).

If you become an employee, you must inform your manager immediately, in writing, if you are the subject of any current or future police investigations/legal proceedings, which could result in a criminal offence, conviction, caution, bind-over or charges, or warnings.

This post is exempt from the Rehabilitation of Offenders Act 1974 because the appointee will have substantial access to young people and/or vulnerable adults. Therefore, an appointment to this post will be subject to checking through the Disclosure and Barring Service (DBS). The successful applicant for this post will, therefore, be required to give consent for the University to check and obtain appropriate

clearance with the DBS for the existence and content of any criminal record in the form of an Enhanced Barred with Adult & Child Workforce Check.

Information received from the DBS and the police will be kept in strict confidence and will be destroyed once the University is satisfied in this regard.

NHS Research Governance

Where it is determined that the duties of this post for the purposes of research involve work with the NHS, it is necessary to ensure that the performance of the duties attached to the post are covered by NHS research governance arrangements and the appointee must comply with all such arrangements, which may include occupational health clearance and DBS clearance.

Supporting University Activities

As a University of Leicester citizen, you are expected to support key university activities such as clearing, graduation ceremonies, student registration and recruitment open days. We expect all staff as citizens to work flexibly across the University if required.

University Values

Inclusive - We are diverse in our makeup and united in ambition. Our diversity is our strength and makes our community stronger.

Inspiring - We are passionate about inspiring individuals to succeed and realise their ambitions. We challenge our community to think differently, to get involved, and to constantly embrace new ideas.

Impactful - As Citizens of Change we will generate new ideas which deliver impact and empower our community

Equity and Diversity

We believe that equity, diversity and inclusion is integral to a successful modern workplace. By developing and implementing policies and systems that challenge stereotypes across all aspects of our work, we have a culture that recognises and values the diverse contributions of our staff which benefits everyone. Our strong values of inclusivity and equity support our efforts to attract a diverse range of high quality staff and students, and identify our University as a progressive and innovative workplace that mainstreams equity, diversity and inclusion.

Appendix: University of Leicester – Research Opportunities

Respiratory Medicine Research

Research is based in the Department of Respiratory Sciences. The main priority areas within Respiratory Medicine in Leicester are summarised below and are likely research themes for a CL to pursue, although other areas in line with the College's research strategy will be considered.

Research is led by Professor Chris Brightling, in association with honorary consultant colleagues listed below:

- Professor Peter Bradding
- Professor Rachael Evans
- Professor Bibek Gooptu
- Professor Dominick Shaw
- Professor Mick Steiner
- Dr Neil Greening, Associate Professor
- Dr Pranab Haldar, Senior Lecturer
- Dr Sarah Diver

and Professor Sally Singh (Physiotherapy)

together with NHS Consultant staff holding honorary University titles at various levels: 6 Honorary Professors, 1 Honorary Associate Professor, 6 Honorary Senior Lecturers and 1 Honorary Lecturer.

There are also currently two NIHR ACL/Honorary Specialty Registrars:

- Dr Tom Ward
- Dr Harvinder Virk

There are also a number of Clinical Research Fellows undertaking higher degrees.

Chronic respiratory disease in ageing patients with multi-morbidity

The ACL will work within chronic respiratory disease in ageing patients with multi-morbidity, functional impairment and frailty. They will continue to develop their academic training within the Respiratory and Lifestyle themes of the NIHR Leicester Biomedical Research Centre (BRC). They will also link with the Leicester Precision Medicine Institute (LPMI). They will build on collaboration within the Midlands Health Alliance with MRC-ARUK Centre for Ageing (Greenhaff/Atherton) and NIHR Birmingham Sarcopenia themes (Lord/Sapey).

Specifically, this post will offer training in the following specific programme.
Developing a stratified medicine approach to identify subgroups of patients with COPD characterised by potentially treatable clinical deficits in physical activity, exercise capacity and skeletal muscle function (Leads: Steiner, Singh, Evans, Greening).

Pulmonary rehabilitation is a high value intervention for patients with COPD that reduces subsequent healthcare costs in patients who attend and complete therapy. Multi-morbidity and frailty are common

treatable traits. The refinement of the therapeutic offer (through stratification) to appropriately match individual health needs will be a major step to broadening access to therapy and enhancing adherence and treatment response. These clinical deficits, related to adverse health outcomes, are not adequately addressed by the current 'one size fits all' approach to exercise therapy.

Underlying skeletal muscle dysfunction, sarcopenia, contributes to these deficits and may result in a differential response to a spectrum of training modalities (Evans). Current work (Steiner, Greening) to understand these changes are currently being studied using sensitive state-of-the-art measures of muscle turnover and regeneration.

Appropriate and timely antimicrobial therapy

The ACL will work to further develop and validate the clinical applications of Leicester's exceptional capacity to sample and analyse exhaled air. In particular this will involve use of adapted face masks to detect pathogens and other biomarkers linked to specific pathologies. The pathogen detection approach has demonstrated value in tuberculosis and is clearly applicable to other respiratory infections, while work on exhaled volatile organic compounds (VOCs) supported by the East Midlands Breathomics MRC/EPSRC molecular pathology hub will provide complementary biomarker analyses. The focus of the work will be early selection of targeted therapy and monitoring of therapeutic responses and will be closely linked to our Respiratory theme in the Leicester NIHR Biomedical Research Centre (BRC) and the Leicester Precision Medicine Institute (LPMI).

Leicester's work on sampling exhaled air is advancing rapidly and new opportunities are constantly being recognised. We will work with the post holder to identify projects that offer the best combination of career development and clinical impact. A critical feature of the adapted masks is that, once captured, the microbial signals are stabilised in the sampling matrix and analysis may either be immediate or deferred.

Microbiome studies have been conducted with Prof Brightling (Respiratory) and Dr Gaillard (Paediatrics) and the microbiology is directed by Profs Barer, Clokie and Morrissey and has been greatly enhanced by a new lecturer, Dr Leah Cuthbertson.

The focus of the work undertaken will be closely linked to our Respiratory theme in the Leicester NIHR Biomedical Research Centre (BRC) and the Leicester Precision Medicine Institute (LPMI). Basic science is supported by our microbiology and infectious diseases centre (LeMID) and in TB by our research group (LTBRG).

Respiratory Medicine or Infection Diseases Research

Multimodal phenotyping of TB infection

The ACL will work to further develop phenotypic characterisation of TB and TB infection, through Leicester's exceptional capacity to perform detailed, multimodal point and longitudinal characterisation of prospective cohorts. Specifically, access to state-of-the-art PET-CT evaluation of TB infection has been pioneered at Leicester and demonstrated transformative potential to inform study design for biomarker discovery.

Leveraging this technology, the ACL will build on the accumulating evidence and analyses to advance development of a PET-CT framework for conducting biomarker development and early clinical validation studies.

The focus of the work will be to establish a new paradigm for characterising disease (TB) risk in healthy and asymptomatic people with TB infection that supports biomarker discovery studies more effectively and at lower cost. This work will be closely aligned to our Respiratory and Infection theme in the Leicester NIHR Biomedical Research Centre (BRC) and the Leicester Precision Medicine Institute (LPMI). The ACL will receive consistent Academic supervision and support to undertake the duties and develop their ideas. It is anticipated the ACL, will deliver high impact publications and deliver robust evidence to support a UKRI or Wellcome Trust Fellowship application. Alongside this, the validated framework will promote industrial collaboration with UK and international Biotech companies by supporting and de-risking the early translational pipeline for commercial development and evaluation of novel biomarkers.

The postholder will also have opportunities to contribute to the wider programme of Clinical TB research hosted at the Respiratory BRC, including the investigation of breath and blood biomarkers for diagnosing active TB, and will join the wider Leicester TB Research Group (LTBRG) to undertake activities that positively promote inclusive research for a disease predominantly affecting underserved and vulnerable communities. This aligns closely with addressing barriers of health inequality that are a National and University priority.

Infectious Diseases Research

The Infectious Diseases research group utilises a broad range of methodologies across a number of research areas.

Broadly, the work of the group encompasses quantitative methods (systematic reviews/meta-analyses, analysis of big data using novel statistical methods, integration of immunological parameters and epidemiology, mathematical modelling, qualitative methods and patient/public involvement/ engagement).
The group works across several research areas including respiratory infections, tuberculosis, blood-borne virus infections, health inequalities, ethnic minority health, migrant health and research into healthcare worker health and well-being. The research group is highly diverse, with clinician and non-clinicians with backgrounds in infectious diseases, pharmacy, mathematical modelling, qualitative research and industry.

Professor Pareek's group has led on international guidance in collaboration with the World Health Organisation, addressing ethnic disparities in relation to pandemic preparedness, and blood-borne virus screening in migrants. The group's research has informed government policy, forming part of official scientific reports for national core studies during the COVID-19 pandemic, as well as evidence for debate within the UK House of Commons. Outputs from the group have been cited by over 100 policy documents globally. Professor Pareek undertakes tuberculosis research with Dr Pranab Haldar, Honorary Consultant in Respiratory Medicine.

Professor Mike Barer's work in microbiology interfaces with the work undertaken in Infectious Diseases & long-term projects are concerned with the analysis of exhaled breath by facemask sampling (FMS), the microbiome of the respiratory tract, and bacteriophage studies.

FMS is unique to Leicester and has demonstrated applications in TB (MRC) and in detection of respiratory viruses including SARS-CoV-2 (National core Study on Transmission). Recent papers have demonstrated the value of this approach in both areas (CID and CMI respectively). Prof Manish Pareek, Dr Caroline Williams (ACL) & Dr Daniel Pan (NIHR doctoral fellow) have contributed to this work.

FMS can be used to detect pathogens and other biomarkers linked to specific pathologies. The pathogen detection approach has demonstrated value in tuberculosis and is clearly applicable to other respiratory infections e.g. to understand the role of bacteria and fungi in the development of conditions including childhood chronic cough, bronchiectasis and cystic fibrosis**.** As most children are unable to produce sputum, a pathogen can only be identified following a bronchoscopy with airway sampling. This requires an invasive procedure with a general anaesthetic and a hospital bed. Finding non-invasive alternatives such as breath identification of pathogenic organisms would be a major step forward.

Microbiome studies have been conducted with Prof Brightling (Respiratory) and Dr Gaillard (Paediatrics).

The focus of the work undertaken is closely linked to the Respiratory theme in the Leicester NIHR Biomedical Research Centre (BRC) and the Leicester Precision Medicine Institute (LPMI). There are also strong research links with the diagnostic service with developing programmes in deploying bench top sequencing in diagnostics and infection control (Dr Chris Holmes).

Clinical Genetics Research

The University has established expertise in research governance and technical aspects of health data use including data linkage activities. In our VICORI programme (£1.4m), the first ever programme joint funded by CRUK/BHF, we are linking cardiovascular and oncology datasets to determine shared risk factors for both cancer and cardiovascular disease. The UoL Institute of Precision Health brings together different domain experts in cardiovascular medicine, cancer and other medical fields with researchers in data and computer science as well as genetics, and has created a collaborative research culture within the University and the NHS.

Links:

- circadian genotype analysis: https://pubmed.ncbi.nlm.nih.gov/36130474/
- oncogenomics: https://pubmed.ncbi.nlm.nih.gov/35647396/
- polygenic risk scores to predict radiation toxicity: https://pubmed.ncbi.nlm.nih.gov/33838170/

Genomics:

The University has been at the forefront of genomic discovery under the leadership of Professor Sir Nilesh Samani, including leadership of the Wellcome Trust Case Control Consortium and the GnomAD Consortium. Outputs from this work are significant including multiple papers in Nature, Nature Genetics and NEJM. Moving forward from discovery to functional analysis and clinical

implementation, trainees will be embedded in our interdisciplinary research teams to maximise training opportunities and ensure a diverse research training experience. This work is supported by major current grants [Wellcome Trust lung function programme, Tobin, £8.8m; Orion Pharmaceuticals (industry collaboration) scalable drug discovery PHEWAS platform, Tobin, £896k; BHF aneurysm genomics programme/BHF Chair, Bown, £1.4m; BHF CAD genomics project grants, Webb, £496k].

Links:

- https://www.ncbi.nlm.nih.gov/pmc/?term=7334194+4006270+2719290

There are specific opportunities to work in the following areas of the College:

In association with Ophthalmology:

School of Psychology & Vision Sciences (Contact: Dr Mervyn Thomas, mt350@le.ac.uk)

We have a strong track record in producing world-leading research using precision medicine and multicentre collaborative approaches for novel diagnostic and prognostic care in ophthalmology and genomic medicine. This builds on the group's gene discovery studies in top tier journals such as Nature Genetics, Science, Cell, Brain and translating findings into clinical care by showing development and clinical utility of first genetic panel for infantile nystagmus and leading work in this area for patient benefit within the 100,000 genomes project. With >£1.5M funding from MRC, the group has pioneered and established paediatric retinal imaging being the first centre to use handheld optical coherence tomography in Europe (Grants: MR/J004189/1 and MR/N004566/1), translating into collaboration with industry partners (Leica Microsystems/Heidelberg Engineering) to clinical application of AI based approaches (Grants: MRC_MC_PC_16051, Fight for Sight_24NN201) within the fields of paediatric retinal imaging, eye movement disorders and oculomics. The group have successfully hosted NIHR trainees, Clinical Wellcome Trust Postdoctoral fellows with excellent career progression attaining external fellowship funding and subsequently lectureship and senior lectureship posts.

Our key research strategy supporting innovative approaches in digital health involves the **integration of traditionally diverse datasets**, techniques and disciplines that are aligned to our distinctive institutional areas of strength in addition to the examples above. We have a novel Wellcome Trust genomics doctoral training award that brings together our expertise in genetic epidemiology with expertise in social sciences, health economics and biostatistics.

Links:

- https://le.ac.uk/news/2022/april/fovea-genes;
- https://www.fightforsight.org.uk/news-and-articles/articles/news/new-grading-system- to-predict-future-vision-of-children-with-infantile-nystagmus

- https://pubmed.ncbi.nlm.nih.gov/?term=17013395%2C+21303855%2C+14595441%2C+15105459%2C+20074521%2C+31009037+35157951%2C+32744312%2C+31009037%2C+28378818%2C+31937464&sort=date
- https://www.fightforsight.org.uk/news-and-articles/articles/news/fight-for-sight-research-results-in-a-genetic-diagnostic-tool-for-children-s-eye-condition

In association with Cardiovascular Sciences
Department of Cardiovascular Sciences (Contact: Professor Matt Bown, m.bown@le.ac.uk)

The post-holder will join and work within the Leicester British Heart Foundation Centre of Research Excellence's Discovery Theme **to participate and develop in the Centre's research programme in cardiovascular genomics**. Strong supervision and mentorship will be provided by the Centre investigators. Core members of the Discovery theme include Professors Sir Nilesh Samani, Matt Bown, Veryan Codd, Martin Tobin, Louise Wain, Dave Adlam, Dr Christopher Nelson and Dr Tom Webb. There are state-of-the art genomics facilities available in the BHF Cardiovascular Research Centre at Glenfield Hospital, Leicester where the post will be located. The Discovery theme members are part of a wider internationally-recognised community of researchers in Leicester undertaking both fundamental and epidemiological genetics research. The diverse interdisciplinary nature of the Centre's researchers and the wider University will provide broad senior and peer support.

The Discovery theme has unique access to genotyped cohorts that will be made available to the fellows for their research. These include large population biobanks such as the GENVASC and EXCEED studies for population genomics, deeply phenotyped cell biobanks for function genomics, and internationally unique disease progression cohorts such as the UK Aneurysm Growth Study and GeneCAST aortic stenosis cohort.

The **Vascular Surgery** group at the University is the leading site for vascular research in the UK, led by first ever British Heart Foundation Professor of Vascular Surgery, the George Davies Chair of Vascular Surgery and an NIHR Advanced Fellow. The group focuses on the integration of genomics and data science for vascular research.

With current funding from the BHF, NIHR, philanthropy and industry of over £20m, and international collaborations across Europe, North America and Oceania, we cover a range of research from fundamental laboratory studies, epidemiology, efficacy and effectiveness trials, and safety studies for industry. The wider team of academic and management staff totals 22 people, including seven clinical academic trainees. The team has supported trainees to secure doctoral fellowships from the BHF, the NIHR and charity, and an NIHR Advanced Fellowship.

Current funding includes BHF funding for the globally unique UK Aneurysm Growth Study genomics bioresource (£900k), NIHR HS&DR funding for an in-silico trial of stratified AAA screening (£700k), NIHR PGfAR funding for the largest ever clinical trial sole-funded by the NIHR, the PHAST trial (£2.3m), NIHR HTA funding for the EVOCC (£2.4m) and RAF (£2.8m) trials and industry funding for disease promotion and data-enabled safety studies of the novel therapy, intravascular lithotripsy for peripheral arterial disease (£240k).

The group's future direction is focused on bringing genomics into clinical practice, and supported by a Wellcome Trust funded PhD student in medical ethics, is developing and piloting a genomically enhanced aortic aneurysm screening strategy for the NHS that will form the basis of future work that

trainees can participate in, as well as any other component of the broad and interdisciplinary research portfolio of the group.

In association with Cancer specialties
Department of Genetics, Genome Biology & Cancer (Contact: Mr Tim Rattay, tr104@le.ac.uk)

We are an internationally-recognised centre for pioneering research into genetics with specific expertise in patterns of human inheritance, identification of genetic determinants of human disease, cancer genetics, circadian rhythms and microbial pathogenesis. The department boasts research strengths with direct medical relevance and includes the Leicester Cancer Research Centre, with a particular reputation for its contributions to understanding the genetic underpinnings of cancer and developing targeted therapies, such as in mesothelioma, breast cancer, and B cell malignancies.