Imperial College London

Job Title:	Research Associate in Epidemiology
Department/School/Faculty:	Department of Epidemiology and Biostatistics, School of Public Health, Faculty of Medicine
Campus location:	St Mary's Campus (Paddington)
Job Family/Level:	Research, Research Associate
Responsible to:	Bethan Davies
Line Management responsibility for:	N/A
Key Working Relationships (internal):	Ed Gregg (PH Theme HDR-UK), Marta Blangiardo (Environment and Health Statistics Group), Daniela Fecht (UK Small Area Health Statistics Unit)
Key Working Relationships (external):	DISCOVER-NOW Hub for Real world Evidence Synthesis and HDRUK centres
Contract type:	Full time, fixed term for 24 months

Research Programme

We are seeking an Epidemiologist to work on the Public Health theme of the Health Data Research UK (HDR UK).

Funding for this post is from HDR UK (https://www.hdruk.ac.uk/) which is the new national institute for data science for health, which was established in 2018 with long term funding support from research councils, UKRI, charitable and governmental research funders. HDR UK seeks to drive improvements in the health of patients and populations through research at regional and national scale. The triple mission of HDR UK spans discovery of disease mechanisms in science through:

      (i)   Precision medicine and trials to public health;
      (ii)   Establishing platforms and underlying infrastructure to enable research at national scale;
      (iii)   Developing training and capacity opportunities.

To deliver this mission, the five major London universities – UCL (coordinating), Imperial College London, King's College London, London School of Hygiene and Tropical Medicine and Queen Mary University of London – came together as a pan London Site. The terms of this partnership are set out in the Site Agreement. The six HDR UK Sites include London, Cambridge University (the Sanger and European Bioinformatics Institute), Oxford, the Midlands, Scotland and Wales/ Northern Ireland. This post is funded (in whole or part) by HDR UK and is expected to deliver collaborations across multiple sites in the UK to advance nationally prioritised projects. You are required to list HDR UK author affiliation and acknowledge HDR UK as a funder in all publications and presentations.

In brief, we will study the impact of the environment on health by leveraging large-scale data collections drawn from across organisations. You will be based in the UK Small Area Health Statistics Unit (SAHSU, www.sahsu.org) in the Department of Epidemiology and Biostatistics. SAHSU maintains large databases of health data, environmental exposures, and socio-demographic factors at the small area level and carries out substantive research on environment and health. SAHSU has considerable experience and expertise in epidemiological methods, with a focus on spatial epidemiology and small area analyses.

The post-holder will be accountable to Dr Bethan Davies. The post-holder will work closely with a team of postdoctoral researchers and PhD students working on health data, environmental exposure data and population cohort data.

Purpose of the Post

We are seeking a talented epidemiologist who is familiar with the analysis and interpretation of population-level studies using health and environmental data to join the UK Small Area Health Statistics Unit. The post will include construction and analysis of large-scale linked datasets using a range of statistical methods. The post is located in the Department of Epidemiology and Biostatistics, School of Public Health, which houses the SAHSU research database is a world-leading epidemiological resources. It was established in 1987 and contains health, environmental and demographic data at high temporal (daily) and spatial (postcode) resolution that covers the previous 30 years. For example, NHS Digital admitted patient care records, Office for National Statistics death registrations, annual population estimates for census output areas by age, sex, ethnicity and socio-economic status. The post-holder will also benefit from the diverse types of biomedical and environmental resources available within Imperial College. For example, SAHSU is a collaborator with Imperial College Health Partners and the innovative Whole Systems Integrated Care through the HDRU-UK DISCOVER-NOW Hub for Real World Evidence.

We are looking to appoint an individual with a background in epidemiology, public health (quantitative) or biostatistics, with analytical and interpretative skills in large-scale population data. The focus will be on small-area studies. The post-holder will collaborate closely with geo-spatial epidemiologists, biostatisticians, public health doctors and database managers. Candidates will be interested in gaining/sharing knowledge and experience within and outside their domains. The post-holder will be responsible for working with participating studies, developing the richness of data sets through further data linkages, running epidemiological studies and interpreting findings. You will work closely with other researchers both within SAHSU and with scientific and public health partners. You will be part of project teams to creatively share knowledge and experience including in the areas of spatial epidemiology, public health, biostatistics and informatics.

Projects may include, for example, developing and analysing an epidemiological study at high-spatial and temporal resolution to quantify or help understand the association between environment (e.g. air pollution, proximity to a point source of pollution, green space, built environment) and disease and analysing health systems-based population-based datasets to examine the variation of care and health outcomes across different communities and environments..

Key Responsibilities

Research Duties
- To work collaboratively as part of a multidisciplinary research team
- To learn and apply suitable techniques for the analysis of health and environmental exposure data at small-area level and/or population-based cohorts
- To conduct and interpret data analysis, and prepare suitable summary outputs of the analysis
- To maintain accurate and complete records of all work and findings
- To ensure that the data are valid, reliable, and up-to-date at all times
- To present findings to colleagues and at conferences
- To prepare statistical summaries of the data suitable for publications in suitable peer-reviewed scientific journals
- To write reports for submission to research sponsors
- To draft and submit publications of the findings to suitable refereed journals
- To attend relevant workshops and conferences as necessary
- To develop contacts and research collaborations within the College and the wider community
- To promote the reputation of the Group, the Department and the College
- To contribute to proposals prepared in the group for research grants
- To conduct and plan own scientific work with appropriate supervision

- To actively participate in the research programme of the Group and Unit
- To participate in Group/Unit research meetings and internal seminars.
- To collaborate with other allied scientists within Imperial College and elsewhere in London and abroad, as appropriate
- To contribute to the smooth running of the Unit's research infrastructure
- To assist in the teaching and/or supervision of undergraduate and postgraduate research students and research assistants as required
- To comply with the College, Division, and Unit safety practices and to attend courses on safety when appropriate
- Any other duties as may be deemed reasonable by Head of group as well as Head of Division/Department/Section

Other Duties

- To undertake appropriate administration tasks
- To undertake any necessary training and/or development
- Any other duties commensurate with the grade of the post as directed by the supervisors

Work Environment

The **UK Small Area Health Statistics Unit** (SAHSU) is a nationally and internationally recognised institution for research into environment and health. SAHSU maintains a unique large data collection of health records and population-based data and has world-leading expertise in handling health data at small area (neighbourhood) level. SAHSU brings together the work of epidemiologists, statisticians, database managers, computer programmers, and experts in exposure assessment to harness large-scale health data to address urgent public health issues.

SAHSU's work includes substantive epidemiological enquiries of environmental health problems and methodological research. SAHSU studies may involve (as necessary) environmental modelling and monitoring as well as biomarkers (of exposure, effects and genetic susceptibility) in addition to the analysis of routine health statistics, to aid interpretation of causal inference.

The SAHSU research database currently contains over 600 million patient records from a number of data providers including national records collected by the Office for National Statistics (ONS), the Welsh Cancer Intelligence & Surveillance Unit (WCISU), NHS Digital and other national sources. These data holdings are updated regularly on an on-going basis, with ONS, WCISU and HES data updated on an annual basis. Other health data are updated as required for specific studies. Ethical and governance permissions to hold and use health data for environmental health research have been obtained from relevant authorities, including National Research Ethics Service (NRES), Health Research Authority Confidentiality Advisory Group (CAG) and the PHE Caldicott Advisory Panel. For further information on SAHSU, please see www.sahsu.org.

The **School of Public Health** at Imperial College London aims to achieve better health in the population through strengthening the public health science base, training the next generation of public health leaders and influencing health policies and programmes around the world. Obesity, cancer, heart disease, dementia and infectious and parasitic diseases are among today's major global public health challenges. Imperial's School of Public Health, under the Directorship of Professor Deborah Ashby, is committed to improving health in populations at various geographical scales, from local (e.g. the new Imperial White City Incubator) to global (e.g. Wellcome Trust project on health cities pathways). The School of Public Health is unique in combining world-class research at local, national and international level with translational work within the Academic Health Science Centre in the Imperial College Healthcare Trust and translates science and epidemiology into policy, health education and primary care. Together with its research, teaching and evidence-led policy work, the School of Public Health aims to address the major public health challenges of the twenty-first century.

The **Department of Epidemiology and Biostatistics**, within the School of Public Health, is headed by Professor Paul Elliott and forms part of the School of Public Health at Imperial College. Our research covers a number of themes including biostatistics, environmental epidemiology and population collections. Our work is used to inform health policy and understand key issues affecting society. The department contains a number of internationally recognised centres, groups, collaborations and research projects.

Imperial College London provides world-class scholarship, education and research in science, engineering, business and medicine. It is consistently rated among the United Kingdom's top three universities and has been ranked 9th in the World University Rankings by the Times Higher Education in 2019. The College has over 8,000 staff and approximately 15,000 students from over 125 different countries. Our reputation for excellence in teaching and research in science, engineering, medicine and business attracts students and staff of the highest international calibre. Staff at Imperial are frequently consulted by governments and also act as members of professional bodies, advise industry; offer informed comment to the media; and engage with the public through various large-scale events such as the Imperial Festival.

Job Description

Requirements Candidates/post holders will be expected to demonstrate the following:	Essential (E)/ Desirable (D)
Education	
At Research Assistant level: Near completion of a PhD or equivalent in a related discipline, for example epidemiology, public health (quantitative), statistics.	E
At Research Associate level: a PhD or equivalent in epidemiology, biostatistics, public health (quantitative) or related disciplines	E
Knowledge & Experience	
Experience in handling (big) administrative data	E
Experience of teaching/training statistical methods	D
Experience of public engagement and data dissemination	D
Experience of working in multi-disciplinary teams	D
An understanding of applied statistical methods in the context of epidemiology	E
A thorough understanding of epidemiological concepts in observational studies	E
Good knowledge of census data, geographies and protocols	D
Experience of small area epidemiological methods	D
Knowledge of statistical approaches to small-area studies	E
Experience with statistical software packages (e.g. R, STATA)	E
Experience with geographic information systems	D
Skills & Abilities	
Excellent verbal communication skills and the ability to deal with a wide range of people	E
Excellent written communication skills and the ability to write clearly and succinctly for publication	E
Ability to direct the work of a small research team and motivate others to produce a high standard of work	E
Ability to conduct a detailed review of recent literature	E
Ability to organise own work with minimal supervision	E
Ability to prioritise own work in response to deadlines	E
Ability to conduct a detailed review of recent literature	E
Ability to develop and apply new concepts	E
Creative approach to problem solving	E
Personal Attributes	
Willingness to work as part of a team and to be open-minded and cooperative	E
Flexible attitude towards work	E
Discipline and regard for confidentiality and security at all times	E
Willingness to undertake any necessary training for the role	E
Willingness to travel both within the United Kingdom and abroad to conduct research and attend conferences	E

Please note that job descriptions cannot be exhaustive and the post-holder may be required to undertake other duties, which are broadly in line with the above key responsibilities.

Imperial College is committed to equality of opportunity and to eliminating discrimination. All employees are expected to follow the 7 Imperial Expectations detailed below:

1)   Champion a positive approach to change and opportunity
2)   Communicate regularly and effectively within and across teams
3)   Consider the thoughts and expectations of others
4)   Deliver positive outcomes
5)   Encourage inclusive participation and eliminate discrimination

6)   Support and develop staff to optimise talent
7)   Work in a planned and managed way

Employees are also required to comply with all College policies and regulations paying special attention to:

- Confidentiality
- Conflict of Interest
- Data Protection
- Equal Opportunities
- Financial Regulations
- Health and Safety
- Information Technology
- Smoking
- Private Engagements and Register of Interests

They must also undertake specific training and assume responsibility for safety relevant to specific roles, as set out on the [College Website Health and Safety Structure and Responsibilities](#) page.

The College is a proud signatory to the San-Francisco Declaration on Research Assessment (DORA), which means that in hiring and promotion decisions, we evaluate applicants on the quality of their work, not the journal impact factor where it is published. For more information, see https://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-evaluation/

The College believes that the use of animals in research is vital to improve human and animal health and welfare. Animals may only be used in research programmes where their use is shown to be necessary for developing new treatments and making medical advances. Imperial is committed to ensuring that, in cases where this research is deemed essential, all animals in the College's care are treated with full respect, and that all staff involved with this work show due consideration at every level.
http://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-integrity/animal-research/

Committed to equality and valuing diversity, we are an Athena SWAN Silver Award winner, a Stonewall Diversity Champion, a Disability Confident Employer and work in partnership with GIRES to promote respect for trans people.