UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Simulation Modelling, Faculty of Environment

Salary: Grade 7 (£34,304 – £40,927 p.a.)

Reference: ENVGE1167

Fixed-term until 15 September 2024 – due to external funding

We will consider job share / flexible working arrangements

Research Fellow in Simulation Modelling
School of Geography, Faculty of Environment

Are you an ambitious researcher looking for your next challenge? Do you want to apply your quantitative skills to provide insight into policy? Do you want to further your career in one of the UK's leading research intensive Universities?

The University of Leeds is seeking to appoint a talented and highly motivated Research Fellow in Simulation Modelling to join The SIPHER Consortium, a large UK public health research initiative, established with funding from the UK Prevention Research Partnership (UKPRP). SIPHER is developing research to prevent physical and mental ill health, and tackle persistent health inequalities. It will work across some of the most important social determinants of health: inclusive economic growth; decent and affordable housing; policies that promote mental wellbeing, and mitigating the long-term effects of adverse childhood experiences. SIPHER is a multidisciplinary, multi-institution partnership bringing together seven universities, policy partners at local, regional and national scales of Government, including: Scottish Government, Greater Manchester Combined Authority and Sheffield City Council, as well as a large number of senior practice partners, e.g. Public Health England, Public Health Wales, the Local Government Association and NICE.

You will develop individual level models, together with underpinning methods that capture the dynamic relationships between societal conditions, such as economic growth, affordable housing or adverse childhood experiences, on the one hand and health and wellbeing on the other. You will use these models to produce estimates of distributional (inequality) impacts needed for policy appraisal at high spatial resolution and assesses the evolution over time of effects in the system. You will liaise with other SIPHER researchers to formulate causal and dynamic model structures, use data from a wide range of sources, and knowledge elicited from experts to build models for prediction and provide quantification of associated uncertainties. You will also calibrate and validate these models in close dialogue with other SIPHER researchers and practice partners. You will be responsible for dealing with data from a range of partners, this will include undertaking data analytics, manipulation and linkage to create a dynamic data infrastructure for the SIPHER consortium.

What does the role entail?

As a Research Fellow, your main duties will include:

- Designing, planning and conducting a programme of investigation, in consultation with [Dr Nik Lomax](#) and [Professor Alison Heppenstall](#) based in the [Leeds Institute for Data Analytics](#);
- Dealing with data from a range of partners, this will include undertaking data analytics, manipulation and linkage;
- Developing novel methods and tools to synthesise and model populations and their attributes, for example using individual based modelling;
- Producing model outputs which include population level and spatial distributions of attributes which will be used in policy appraisal;
- Working closely with other SIPHER researchers to ensure alignment of modelling activities with policy priorities, embed data and other evidence into the individual based modelling framework and integrate models within decision support tools;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and contributing to setting the direction of the research project in collaboration with members of the team, international scientific collaborators and industrial project partners;
- Evaluating methods and results from other researchers and relating such evaluations appropriately to your own work;
- Preparing papers for publication in leading international journals and disseminating research results and outputs through conference presentations;
- Working both independently and also as part of a larger team of researchers;
- Engaging in knowledge-transfer activities and in the co-production of knowledge on 'worse case' sea level rise with project partners;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

What will you bring to the role?

As a Research Fellow you will have:
- A PhD or near completion (i.e. initial thesis to be handed in before the start date) in computer science, statistics, physics, mathematics, quantitative social science or a closely allied discipline;
- A strong background in data analytics and modelling;
- Programming expertise, for example in Python, Java, C++, R, or a similar language;
- An ability to think creatively when standard techniques or libraries are not suitable, in order to develop novel, innovative solutions to complex problems;
- Ability to use your initiative to develop and pursue new research ideas in line with the requirements of the project;
- Good time management and planning skills, with the ability to meet deadlines and work effectively under pressure;
- Excellent communication skills including evidence of having presented work at a high academic level and an ability to explain complicated technical work to colleagues in diverse fields;
- Proven ability to manage competing demands effectively, responsibly and without close support;
- A proven ability to work well both individually and in a team;
- An ability to write high-quality research papers with an emerging track record in the publication of scholarly articles in peer-reviewed journals;
- A strong commitment to your own continuous professional development.

You may also have:
- Experience in spatial microsimulation and/or or other individual-level modelling techniques;
- Expertise in Geographical Information Systems: ArcGIS, Mapinfo, R, QGIS or similar;
- Evidence of winning funding for research projects.

How to apply

You can apply for this role online; more guidance can be found on our How to Apply information page. Applications should be submitted by **23.59** (UK time) on the closing date.

Please note: If you are not a British or Irish citizen, from 1 January 2021 you will require permission to work in the UK. This will normally be in the form of a visa but, if you are an EEA/Swiss citizen and resident in the UK before 31 December 2020, this may be your passport or status under the EU Settlement Scheme.

Contact information

To explore the post further or for any queries you may have, please contact:

Dr Nik Lomax, Associate Professor
Tel: +44 (0)113 343 3321
Email: n.m.lomax@leeds.ac.uk

or

Professor Alison Heppenstall, Professor in Geocomputation
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Additional information

Find out more about the Faculty of Environment.

Find out more about the School of Geography.

Find out more about the Leeds Institute for Data Analytics (LIDA)

Find out more about our Research and associated facilities.

Find out more about equality in the Faculty.

A diverse workforce
As an international research-intensive university, we welcome students and staff from all walks of life and from across the world. We foster an inclusive environment where all can flourish and prosper, and we are proud of our strong commitment to student education. Within the Faculty of Environment we are dedicated to diversifying our community and we welcome the unique contributions that individuals can bring, and

particularly encourage applications from, but not limited to Black, Asian and ethnically diverse people; people who identify as LGBT+; and people with disabilities. Candidates will always be selected based on merit and ability.

The Faculty of Environment has received a prestigious Athena SWAN silver award from Advance HE, the national body that promotes equality in the higher education sector. This award represents the combined efforts of all schools in the Faculty and shows the positive actions we have taken to ensure that our policies, processes and ethos all promote an equal and inclusive environment for work and study.

Working at Leeds
Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our Working at Leeds information page.

Candidates with disabilities
Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our Accessibility information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

Rehabilitation of Offenders Act 1974
A criminal record check is not required for this position, however, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our Criminal Records information page.