



UNIVERSITY OF LEEDS

## CANDIDATE BRIEF

**Research Fellow in Agent-based Modelling for Zero Carbon Mobility**  
**School of Geography, Faculty of Environment**



**Salary: Grade 7 (£37,099 – £44,263 p.a. depending on experience)**

**Reference: ENVGE1234**

**Fixed term for 60 months to complete specific time limited work**

**Location: Main Campus (with scope for hybrid working)**

**We are open to discussing flexible working arrangements.**

## Overview of the Role

**Would you like to be part of a major collaborative research programme to help tackle transport's contribution to the climate crisis? Are you looking to apply your research skills to predict transitions towards sustainable mobility systems? Do you thrive on working in an exciting and creative environment committed to making a difference?**

Inspiring Futures for Zero Carbon Mobility ([INFUZE](#)) is a major £7.8m five-year research grant funded by the Engineering and Physical Sciences Research Council. Working across the Universities of Leeds, Lancaster and the Royal College of Art INFUZE is seeking to achieve transformative change in how transport works, addressing the climate challenge whilst improving fairness and quality of life. INFUZE is an exciting new collaboration which will work with citizens and businesses to re-imagine our transport systems. The programme will build an increasingly ambitious suite of real-world trials with communities, transport providers and government partners.

We are looking to recruit a passionate and committed researcher to drive forward our work on simulating possible transitions away from individualised car ownership. The candidate will require expertise in agent-based modelling, preferably with experience in developing large-scale transport models. However, the models we build will have a direct interface with community stakeholders and mobility service providers, so we are particularly seeking applicants who are comfortable in working with external stakeholders and able to support co-creation.

This role will be located in the School of Geography's [Institute for Spatial Data Science \(ISDS\)](#), as part of the Mobility Science Lab. As well as working closely with Prof Ed Manley and Dr Roger Beecham, and the wider INFUZE team, there will be opportunities to network and contribute to research activities within ISDS, the Institute for Transport Studies (ITS) and the Leeds Institute for Data Analytics (LIDA).



## Main duties and responsibilities

- Developing of an agent-based models of mobility behaviour and transitions over the long-term in a variety of UK urban contexts;
- Developing of interfaces that enable external stakeholders to inspect model outputs and propose new solutions during facilitated workshops;
- Collaborating with project partners both in academia and non-academia in development of simulation tools;
- Execution of simulation scenarios relating to different implementations of the transportation system, including variations by cost, spatial design, system configuration, accessibility, and so on;
- Participating in co-creation activities to develop the research direction, test and receive feedback;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Preparing papers for publication in leading international journals and disseminating research results through other recognised forms of output;
- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate.

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.



## Qualifications and skills

### Essential

- A PhD (awarded or nearing completion, i.e. the initial thesis needs to have been handed in at the point of application) in computer science, geography, mathematics, transportation, social science, agent-based modelling, or relevant technical discipline, with a significant component of programming and/or data science;
- Experience of developing agent-based models within spatial contexts;
- Solid understanding of theories and models of human behaviour, decision-making, and activity choice within mobility or spatial contexts;
- Deep knowledge of a programming language appropriate for the development of agent-based models (preferably Java or Python);
- Experience of multidisciplinary working, and proven ability and interest in working across traditional disciplinary boundaries;
- Knowledge of modern software development processes to support multisite / multiuser code contributions and open science;
- Excellent written and verbal communication skills including presentation skills;
- A proven ability to work closely with a small group of scientists and collaborate with a wider, multidisciplinary team;
- A strong commitment to your own continuous professional development;
- A clear personal motivation for the goals of the project.

### Desirable

- Expertise in transportation modelling and activity-based modelling;
- Experience of developing large-scale agent-based transportation models.
- Experience in the development of models using the MATSim framework;
- A proven track record of peer-reviewed publications in high impact factor journals.



## 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 advertised closing date.

## Additional information

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.

Find out more about the [INFUZE project](#).

Find out more about the [Faculty of Environment](#) and [School of Geography](#).

Find out more about [Athena Swan](#) in the Faculty.

### A diverse workforce

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](mailto:disclosure@leeds.ac.uk).



## Criminal record information

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.

