

## SENIOR RESEARCH ASSOCIATE in Microsimulation for Sustainable, Healthy, and Resilient Cities

Job Ref: REQ260308

The **School of Sport Exercise and Health Sciences (SSEHS)** is a multi-disciplinary school committed to fostering a diverse and inclusive academic community. It upholds the highest standards of excellence in research, innovation, and pedagogy across the full spectrum of disciplines within sport, exercise, health and wellbeing.

Internationally recognised for its contribution to the study of sport, exercise and health, the school has wide-ranging expertise, encompassing such diverse areas as biomechanics, medicine, molecular and cellular biology, nutrition, pedagogy, psychology, physiology, sociology, economics and sport management.

The School is extremely proud to hold an [Athena Swan Silver Award](#) since 2013, recognising the commitment and work of the School in addressing gender inequalities in Science and to improving career progress for female academics. The School is committed to ensuring that female students and staff are able to achieve their full potential; and provides a flexible and open working culture to enable staff to maintain a work-life balance.

We also welcome applications from those who are looking to work part-time.

### Research and Innovation

Research and Innovation within the School is characterised by excellence and breadth, and its quality was recognised in the 2021 Research Excellence Framework where Loughborough University ranked top for research power (GPA x volume) in Sport and Exercise Sciences, Leisure and Tourism. Loughborough University has also placed Number 1 in the QS world ranking for sport-related subjects for nine consecutive years (2017-2025, every year since the category was introduced). A broad range of social and natural sciences contribute to the School's research and innovation activity which is organised within three overlapping themes:

- **Sport Research and Innovation theme** utilises several disciplines to understand how sport engages individuals, communities and organisations and supports the enhancement of athletes' performance in competitive sport.
- **Health Research and Innovation theme** brings together research from multiple disciplines with the shared goal of enhancing health, promoting healthy living, and improving wellbeing across all stages of life and all communities.

The school's research and Innovation (R&I) themes articulate with the Universities core strategic themes: Sport, Health and Wellbeing; Vibrant and Inclusive Communities; and Climate Change and Net Zero. [Strategic themes | Creating Better Futures. Together | Loughborough University](#)

### Project Summary

This post sits within Professor James Woodcock's microsimulation and urban modelling research programme at Loughborough University. The programme develops and applies agent-based and microsimulation models to understand how cities — including their transport systems, land use, housing, and economies — shape population health, wellbeing, and equity.

Current work includes an integrated modelling suite (SILO–MATSim) applied to Greater Manchester, the ITHIM health impact modelling framework, and a range of projects addressing physical activity, air pollution, climate resilience, housing inequalities, and the health impacts of economic shocks. The programme has active international collaborations with TU Munich, TU Graz, the University of Utrecht, ISGlobal (Barcelona), and TU Berlin, and strong links to policy at city, national, and international level.

The post holder will contribute to and help shape the direction of this growing programme, with opportunities to develop their own research agenda, build international collaborations, and supervise the next generation of researchers.

## Job Description

**Job Family and Grade** Specialist & Supporting Academic (Research) Grade 7

### Job Purpose

The post holder will contribute to the delivery and development of the microsimulation and urban modelling research programme, working under the direction of Professor Woodcock. The role offers a genuine opportunity to develop as a researcher — contributing to an internationally connected programme, building collaborations, and helping to shape new directions in urban simulation for health and sustainability.

- To lead and manage a range of research activities within the microsimulation modelling programme, including contributing to the delivery of existing funded projects in line with award objectives.
- To lead and contribute to future funding applications that extend and develop the programme's portfolio, spanning areas such as urban simulation, transport, climate mitigation and adaptation, housing, and health inequalities.
- To support Professor Woodcock with the integration of work across different strands of the research programme, including taking on delegated management responsibilities where appropriate.
- To build and maintain collaborative relationships with research partners across institutions and disciplines — including international partners, policy stakeholders, and practice organisations — and contribute to developing these into long-term research collaborations and joint funding opportunities.

### Job Duties

#### Research and Enterprise

- Lead the delivery of funded research projects within the microsimulation modelling programme, working in line with award objectives and under the direction of Professor Woodcock.
- Develop and apply microsimulation and agent-based modelling tools, including the established SILO–MATSim integrated modelling suite and the ITHIM health impact framework, as well as new methods and applications.
- Collect, analyse, and interpret research findings using appropriate modelling and simulation methods.
- Lead on the preparation and submission of funding applications that extend the programme's portfolio in areas such as transport and health, climate adaptation, housing, and health inequalities.
- Coordinate research activities across different strands of the programme, including budget monitoring and reporting to funders as required.
- Build and maintain collaborative relationships with research partners across institutions and disciplines, leading to the development of longer-term collaborations and joint funding opportunities.
- Publish as co-author and disseminate research findings through papers, conferences, and other appropriate channels.
- Contribute to consultancy and knowledge exchange activities as required, maintaining confidentiality and meeting intellectual property obligations.
- Contribute to quality and audit processes including the Research Excellence Framework.

#### Teaching and Researcher Development

- Supervise PG/UG project students as appropriate, with opportunities to develop supervisory experience via supporting the supervision of doctoral researchers.
- Deliver teaching activities as required, including specialist seminars or workshops drawing on research expertise.
- Build capacity in agent-based modelling and microsimulation within the group and more broadly.

#### Other

- Work effectively with relevant administrative, technical, and academic staff across the School and University.
- Engage in training and development programmes as required.
- Undertake such other duties as may be reasonably requested and that are commensurate with the nature and grade of the post.

#### Points to Note:

The purpose of this job description is to indicate the general level of duties and responsibility of the post. The detailed duties may vary from time to time without changing the general character or level of responsibility entailed.

#### Organisational Responsibility

Reports to Professor James Woodcock, Professor of Public Health and Simulation

## Person Specification

Your application will be assessed based on the essential and desirable criteria listed below.

Applicants are strongly encouraged to explicitly demonstrate how they meet each essential (and desirable) criteria at the application stage. The criteria that you need to demonstrate in your application will be listed as Stage 1 in the table below.

Stages of assessment are as follows:

- 1 – Criteria measured within the Application
- 2 – Criteria measured at Test/Assessment Centre/Presentation
- 3 – Criteria measured at Interview

### ESSENTIAL

Area	Criteria	Stage
<b>Experience</b>	Proven research experience (academic or industrial) in a relevant quantitative field	1, 3
	Substantial experience of applying appropriate research methods in a modelling or simulation context	1, 3
	Substantial experience of contributing to research projects in line with ethical and regulatory procedures	1, 3
	Some experience of contributing to research funding applications	1, 3
	Broad knowledge or experience in one or more of the following areas: transport modelling or travel behaviour, urban or land use planning, air quality and pollution modelling, housing, household economics, or GIS and spatial analysis	1, 3
<b>Skills and abilities</b>	Demonstrated skills in agent-based modelling, microsimulation, or closely related simulation approaches, or a strong and demonstrable aptitude to develop these quickly	1, 3
	Good written and verbal communication skills, including ability to present complex research findings clearly	1, 3
	Ability to facilitate research project delivery within agreed timelines and budgets	1, 3
	Ability to work both independently and collaboratively as part of a team	1, 3
	Interpersonal skills and a willingness to support and learn from colleagues	1, 3
	Proven technical leadership skills in a relevant discipline	1, 3
<b>Qualifications</b>	A good first degree in a relevant subject	1
	PhD in a relevant area	1
	Willingness to work towards Fellowship of the HEA	1
<b>Training</b>	Willingness to undertake training as necessary and adopt new procedures as required	1, 3
<b>Other</b>	Ability to demonstrate awareness of working in a diverse cultural environment and show respect for people from different backgrounds	1, 3

**Desirable Criteria:** These are skills, experience and competencies that are additional extras that **may** be used to narrow the pool down if we receive a high volume of applications that meet the essential criteria.

Area	Criteria	Stage
<b>Experience</b>	Experience of contributing to or leading publications in peer-reviewed journals	1
	Experience of working with policy or practice partners	1
	Experience of mentoring or supporting more junior colleagues or students	1, 3

<b>Skills and abilities</b>	Familiarity with specific modelling platforms relevant to the programme (e.g. MATSim, SILO, ITHIM, or similar)	1
	Programming skills relevant to simulation and modelling (e.g. Java, R, Python)	1, 3
	GIS skills and experience of working with spatial data	1, 3
<b>Qualifications</b>	Membership of an appropriate professional or learned society	1

## Conditions of Service

The appointment will be subject to the [University's Terms and Conditions of Employment](#) relevant to the job grade.

## Shared University Responsibilities

As a member of the Loughborough community, you are expected to:

- Take reasonable care of yourself, others and the environment, and to prevent harm by your acts or omissions. All staff are therefore required to adhere to the University's Health, Safety and Environmental Sustainability Policies & Procedures.
- Uphold and actively contribute to the [University's commitment to Equity, Diversity, and Inclusion](#), ensuring that all duties are carried out in alignment with this.

## Our Purpose, Vision, and Values

Our purpose, Vision and Values underpin all that we do and shape how we work together at Loughborough.

We're proud to promote our values: **Adventurous, Collaborative, Creative, Authentic** and **Responsible**. Our people bring these values to life every day, and they are central to the positive and supportive culture that makes Loughborough unique.

If you join us, you'll be encouraged to bring these values to life in your own work and contribute to the positive, supportive culture that makes Loughborough unique.

Read more about our [vision and values](#).

## Our Accreditations



We strive to create a culture that supports equity and celebrates diversity throughout the campus. The University holds a [Bronze Athena SWAN award](#) which recognises the importance of support for women at all stages of their career.



We are proud to be a [Race Equality Charter Member](#). The Charter aims to improve the representation, progression and success of all minority ethnic staff and students within higher education and address issues of racism within higher education institutions (HEIs).



We are proud to be a Disability Confident Employer and have adopted a proactive approach to employing disabled people and to creating a more diverse workforce. We ensure that our recruitment processes are inclusive and accessible. We guarantee to offer an interview to all applicants who have declared a disability, provided that the essential criteria for the role are met. We proactively anticipate and provide reasonable adjustments and support existing employees who acquire a disability or long-term condition to thrive in the workplace.



We are a real living wage employer, and our Living Wage Employer Mark shows our commitment to paying our staff according to the cost of living.



We are proud supporters of the [City of Sanctuary movement](#) and delighted to be recognised as a University of Sanctuary. This national network brings together, university staff, lecturers, academics, and students, who together work to make Higher Education institutions places of safety, solidarity and empowerment for people seeking sanctuary.



We are committed to addressing gender inequalities in science and to improving career progression for female academics. The School of Sport, Exercise and Health Sciences holds a [Silver Athena SWAN award](#) which recognises the importance of support for women at all stages of their career.

**As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.**