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| Last updated: | 16/01/2025 |

**JOB DESCRIPTION**

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| Post title: | **Senior Research Fellow in Spatiotemporal Population Modelling** | | |
| Standard Occupation Code: (UKVI SOC CODE) | 2119 - Natural and social science professionals | | |
| School/Department: | School of Economic, Social and Political Sciences | | |
| Faculty: | Faculty of Social Sciences | | |
| Career Pathway: | Education, Research and Enterprise (ERE) | Level: | 5 |
| \*ERE category: | Research pathway | | |
| Posts responsible to: | Project leader, Prof. Justin Sheffield  Work package leaders, Dr Samantha Cockings, Prof Felix Eigenbrod, Dr Jason Hilton | | |
| Posts responsible for: | No direct supervisory responsibility | | |
| Post base: | Office-based (see job hazard analysis) | | |

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| Job purpose |
| To undertake research in the area of spatial and demographic modelling as part of the project “ETHOS; Co-developed Environmental Solutions to Mitigate the Impact of Temperature Extremes on Vulnerable Populations”, funded by the National Environmental Research Council.  The post-holder will lead development of models of the size, structure, vulnerability, and location of the UK population under the direction and guidance of Dr Jason Hilton, Dr Samantha Cockings and Prof Felix Eigenbrod.  Where appropriate, the post-holder may also be asked to contribute to other tasks linked to the ETHOS project, including project reporting, seminars, workshops and conferences, as required by the project leads.  The post holder will be required to work with the project team to disseminate information about the research through electronic and social media, as well as in written form. |

| Key accountabilities/primary responsibilities | | % Time |
| --- | --- | --- |
|  | To develop and implement population estimation and projection models. | 35 % |
|  | To carry out spatial and temporal modelling of the population. | 25 % |
|  | Collect, organise, analyse and document secondary data to be used in the population models and organise outputs in line with University policies | 10 % |
|  | To write reports, journal articles and policy briefings and provide input for the project website | 10 % |
|  | To write and deliver presentations for conferences, and workshops involving the academic, policy and user community, as well as other stakeholders | 5 % |
|  | Carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control. | 5 % |
|  | Undertake other relevant research activities or duties as allocated by the line manager following consultation with the post holder. | 10 % |

| Internal and external relationships |
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| * **Internal:** The post-holder will work under the day-to-day direction of Dr Jason Hilton, Dr Samantha Cockings and Prof Felix Eigenbrod, and the overall direction of the principal investigator Prof. Justin Sheffield. They will collaborate with other Researchers on the project. * **External:** The post-holder may be expected to liaise with project partners, which include both other universities, medical institutions and third sector bodies. They will also need to engage with other academics and potential users of the research to disseminate findings. |

| Special Requirements |
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| To be able to attend national and international conferences and meetings for the purpose of disseminating research results, representing the project, establishing and maintaining research collaborations, as well as contributing to enterprise opportunities, as required. |

**PERSON SPECIFICATION**

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| Criteria | Essential | Desirable | How to be assessed |
| Qualifications, knowledge and experience | PhD (or equivalent professional qualifications and experience) with strong statistical or mathematical component in a relevant discipline (e.g., statistics, demography, economics, geography, mathematics or computer science)  Expertise in statistics and/or quantitative demography.  Skilled in the use of R and/or Python. | Experience of handling and modelling geospatial data, and the use of R, Python and/or GIS to analyse such data.  Understanding and knowledge of Bayesian statistics. Experience of fitting models using Bayesian methods. | Application, references and interview |
| Planning and organising | Ability to plan and organise work independently and as part of a team  Ability to work to deadlines |  | Application, references and interview |
| Problem solving and initiative | Ability to manage long-term projects that involve data collection, programming, and analysis  Ability to find solutions to problems as they surface |  | References and interview |
| Management and teamwork | Ability to work as part of a team |  | Application, references and interview |
| Communicating and influencing | Ability to communicate new and complex information effectively, both verbally and in writing, engaging the interest and enthusiasm of the target audience  Able to present research results at group meetings and conferences  Able to write up research results for publication in leading peer-viewed journals  Able to work proactively with colleagues in other work areas/institutions, contributing specialist knowledge to achieve outcomes |  | Application, references and interview |
| Other skills and behaviours | Interests in modelling population and geospatial data.  Word processing, internet and bibliographic search skills, spreadsheets (e.g. Excel) and bibliographic software (e.g. Endnote)  Compliance with relevant Health & Safety issues  Positive attitude to colleagues and students. |  | References and interview |
| Special requirements | Ability to attend national and international conferences and meetings to present research results and for other purposes listed above |  | Application, references and interview |

**JOB HAZARD ANALYSIS**

**Is this an office-based post?**

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| Yes | If this post is an office-based job with routine office hazards (eg: use of VDU), no further information needs to be supplied. Do not complete the section below. |
| No | If this post is not office-based or has some hazards other than routine office (eg: more than use of VDU) please complete the analysis below.  Hiring managers are asked to complete this section as accurately as possible to ensure the safety of the post-holder. |

## - HR will send a full PEHQ to all applicants for this position. Please note, if full health clearance is required for a role, this will apply to all individuals, including existing members of staff.

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| **ENVIRONMENTAL EXPOSURES** | **Occasionally**  (<30% of time) | **Frequently**  (30-60% of time) | **Constantly**  (> 60% of time) |
| Outside work |  |  |  |
| Extremes of temperature (eg: fridge/ furnace) |  |  |  |
| ## Potential for exposure to body fluids |  |  |  |
| ## Noise (greater than 80 dba - 8 hrs twa) |  |  |  |
| ## Exposure to hazardous substances (eg: solvents, liquids, dust, fumes, biohazards). Specify below: |  |  |  |
| Frequent hand washing |  |  |  |
| Ionising radiation |  |  |  |
| **EQUIPMENT/TOOLS/MACHINES USED** | | | |
| ## Food handling |  |  |  |
| ## Driving university vehicles(eg: car/van/LGV/PCV) |  |  |  |
| ## Use of latex gloves (prohibited unless specific clinical necessity) |  |  |  |
| ## Vibrating tools (eg: strimmers, hammer drill, lawnmowers) |  |  |  |
| **PHYSICAL ABILITIES** | | | |
| Load manual handling |  |  |  |
| Repetitive crouching/kneeling/stooping |  |  |  |
| Repetitive pulling/pushing |  |  |  |
| Repetitive lifting |  |  |  |
| Standing for prolonged periods |  |  |  |
| Repetitive climbing (ie: steps, stools, ladders, stairs) |  |  |  |
| Fine motor grips (eg: pipetting) |  |  |  |
| Gross motor grips |  |  |  |
| Repetitive reaching below shoulder height |  |  |  |
| Repetitive reaching at shoulder height |  |  |  |
| Repetitive reaching above shoulder height |  |  |  |
| **PSYCHOSOCIAL ISSUES** | | | |
| Face to face contact with public | ✓ |  |  |
| Lone working | (✓) |  |  |
| ## Shift work/night work/on call duties |  |  |  |