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| Last updated: | 7th July 2022 |

**JOB DESCRIPTION**

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| Post title: | **Research Fellow in Modelling of Population Processes** | | |
| 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: | 4 |
| \*ERE category: | Research pathway | | |
| Posts responsible to: | Project leader, Prof. Jane Falkingham (Level 7)  Work package leaders, Dr Jason Hilton (Level 5) | | |
| Posts responsible for: | No direct supervisory responsibility | | |
| Post base: | Office-based (see job hazard analysis) | | |

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| Job purpose |
| To undertake research as part of the modelling strand of the Connecting Generations (CG) project within the Centre for Population Change (CPC), funded by the Economic and Social Research Council.  The post-holder will make a significant contribution to the development, implementation and analysis of models of kinship under the direction and guidance of Dr Jason Hilton (Strand Leader), Professor Jakub Bijak, Dr Erengul Dodd and Professor Peter W. F. Smith.  Where their skills are appropriate, the post-holder may also be asked to contribute to other research tasks and projects affiliated with the Centre for Population Change, including project reporting, seminars, workshops and conferences, as required by the project leads.  The post holder will be required to work with the Research Manager and the Knowledge Exchange Team to disseminate information about the research through electronic and social media,  as well as in written form. |

| Key accountabilities/primary responsibilities | | % Time |
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|  | To develop and implement matrix and simulation models of kinship. | 50 % |
|  | Analyse data and population model outputs | 10 % |
|  | Collect, organise and document secondary data to be used in the population models and organise outputs in line with the University policies | 10 % |
|  | To assist in the writing of reports, journal articles and policy briefings and provide input for the project website | 10 % |
|  | To assist in the writing and delivery of 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 as well as other strand members Professors Jakub Bijak and Peter W.F. Smith and Dr Erengul Dodd, and the overall direction of the project Director (Prof. Jane Falkingham). They will collaborate with the Centre Manager and other Researchers on the project / related projects. * **External:** The post-holder may be expected to liaise with the Office for National Statistics or other statistical agencies, as appropriate. 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 Department, establishing and maintaining research collaborations, as well as contributing to enterprise opportunities, as required.  *Applications for Research Fellow positions will be considered from candidates who are working towards or nearing completion of a relevant PhD qualification. The title of Research Fellow will be applied upon successful completion of the PhD. Prior to the qualification being awarded the title of* ***Senior Research Assistant*** *will be given.* |

**PERSON SPECIFICATION**

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| Criteria | Essential | Desirable | How to be assessed |
| Qualifications, knowledge and experience | PhD, or close to completion (or equivalent professional qualifications) with strong statistical or mathematical component in a relevant discipline (e.g., statistics, demography, economics, mathematics or computer science)  Detailed understanding and knowledge of statistics and/or quantitative demography, and of matrix algebra.  Skilled in the use of Python and/or R. | Knowledge and expertise in microsimulation models.  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 migration data and processes  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 |  |  |  |