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| Last updated: | 02 Feb 2023 |

**JOB DESCRIPTION**

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| Post title: | **Research Fellow** | | |
| Standard Occupation Code: (UKVI SOC CODE) | 2119 – Natural and social science professionals (dependant on %split of key accountabilities) | | |
| School/Department: | Geography and Environmental Sciences (SoGES)/WorldPop | | |
| Faculty: | Environmental and Life Sciences (FELS) | | |
| Career Pathway: | Education, Research and Enterprise (ERE) | Level: | 4 |
| \*ERE category: | Research pathway | | |
| Posts responsible to: | Head of SSPM (Chris Nnanatu), project leads | | |
| Posts responsible for: |  | | |
| Post base: | Office-based, University of Southampton, Highfield Campus | | |

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| Job purpose |
| To undertake spatial statistical modelling in accordance with awarded projects focussed on undertaking high resolution mapping and analysis of demographic and health changes over time using a range of input data at different geographical scales and ancillary datasets (such as environmental and remote sensing covariates), in several low and middle-income countries.  To work on population mapping dynamics and projections and population estimates for humanitarian preparedness and response may also be involved depending on candidate experience and interests, and project needs. |

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| Key accountabilities/primary responsibilities | | % Time |
|  | Undertake the development of spatial statistical approaches to support the production of high-resolution estimates for a range of indicators (e.g., demographic, socio-economic, degree of urbanisation, migration, population displacement etc…), through the integration of geospatial covariate layers, survey data, administrative data, census data, and other spatially referenced data sources. Also, undertake the development of methods for analysing trends over time or mapping population dynamics, and identifying areas of improvements for each demographic indicator and at different geographical levels in multiple focus countries. | 60 % |
|  | Supporting projects in the production of maps, ad-hoc analyses, images and any related material and documentation for the construction of online portals. | 15 % |
|  | Supporting donors in operationalizing the research outputs, and/or responding to ad-hoc analysis and modelling requests. | 5 % |
|  | Contribute to the training of international agency, government and donor staff in the methods developed, and the running of workshops. | 5 % |
|  | Regularly disseminate findings by contributing to the preparation of publication materials for refereed journals, presenting results at conferences, or exhibiting work at other appropriate events. | 5% |
| 6. | Any other duties as allocated by the line manager following consultation with the post holder. | 5 % |
| 7. | To develop and carry out an area of personal research, and/or contribute to activities with the School of Geography and Environmental Science. | 5 % |

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| Internal and external relationships |
| You will join WorldPop’s Spatial Statistical Population Modelling (SSPM) team, which is led by Dr C. Christopher Nnanatu. The post-holder will be line managed by Dr C. Christopher Nnanatu and will likely support several different projects at WorldPop.  External partner organisations and national statistical offices.  WorldPop’s Portfolio Management Office (PMO), Faculty Operating Services (FOS) for SoGES and FELS, University Professional Services. |

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| Special Requirements |
| The role-holder is likely to be expected to travel internationally occasionally during the period of employment to attend research meetings, contribute to running workshops/training and attend national and international conferences for the purpose of disseminating outputs and sharing knowledge.  *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 equivalent professional qualifications in a computational/statistical/quantitative discipline, ideally with a focus on the quantitative social sciences, such as public health, epidemiology, demography, economics, data science, or a related discipline.  Detailed knowledge, understanding and experience of spatial statistical methods  Strong computer programming skills – R, Stata, etc  Experience at working with large gridded 'raster' datasets and experience with GIS  Experience in survey sample design and analysis. | Knowledge and experience of Bayesian geostatistical approaches using INLA, MCMC (HMC), etc  Knowledge and familiarity of household and/or migration survey and demographic datasets  Familiarity with multi-level analysis and generalized additive modelling using survey data  Familiarity with spatial visualization tools and methods | Application documents, interview |
| Expected Behaviours | Able to apply and actively promote equality, diversity and inclusion principles to the responsibilities of the role.  Demonstrate the [Southampton Behaviours](https://www.southampton.ac.uk/~assets/doc/hr/Southampton%20Behaviours.pdf) and work with colleagues to embed them – as a way of working within the team. |  |  |
| Planning and organising | Able to organise own research activities to deadline and quality standards  Able to plan and organise own workload in the absence of supervision |  | Application documents, interview |
| Problem solving and initiative | Proven ability to manage research projects, meeting defined milestones on time  Able to develop understanding of complex problems and apply in-depth knowledge to address them |  | Application documents, interview |
| Management and teamwork | Work effectively in a team, understanding the strengths and weaknesses of others to help teamwork development |  | Application documents, interview |
| Communicating and influencing | 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  Work proactively with colleagues in other work areas/institutions, contributing specialist knowledge to achieve outcomes |  | Application documents, interview |
| Other skills and behaviours | Understanding of relevant Health & Safety issues  Positive attitude to colleagues and students |  | Application documents, interview |
| Special requirements | Able to attend national and international conferences to present research results  Able to travel to visit national Ministries of Health and partner agencies in low-income countries |  | Application documents, 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 |  |  |  |