ESRC 1+3 / +3 PhD Studentship on the Development of a Bayesian Network Approach for Analysing Interdisciplinary Social Science and Biological Data: The Case of Antimicrobial Resistance

Project details

Big data across diverse disciplines is a growing resource and challenge. There is an urgent need for advanced analytical methods to maximise the potential benefit for population health. The aim of this PhD project is to develop methods used in computational biology – Bayesian networks – to investigate the issue of antimicrobial resistance (AMR), a huge global health threat. This interdisciplinary project will join expertise in social sciences with data science / computational modelling, and biomedical and genomic expertise. For this we will use data collected through a large international consortium (the HATUA consortium) which provides a unique individual and community-level dataset of social, environmental microbiological and genomic data collected in Kenya, Uganda and Tanzania. The project will contribute to developing methods needed for applying Bayesian networks to social science data, and the substantive findings about the drivers of AMR will inform global health strategies.

About the institution

The successful applicant will be jointly supervised by the Schools of Geography and Sustainable Development, Biology and Medicine. They will become a member of the Population and Health Research Group (PHRG) (https://populationandhealth.wp.st-andrews.ac.uk/) whose research covers a wide range of population topics including the analysis of health and mortality; family and fertility dynamics; life course choices; internal and international migration; ethnicity and minority populations; and population inequalities. They will also be a member of the newly formed ‘Bayes Net Group’ at the School of Biology, composed of various PhDs and postdocs using similar methods.

Eligibility

Applicants must meet the following eligibility criteria:

- A first class or an upper secondary undergraduate or master’s degree in any area of quantitative social and health sciences, applied mathematics, computer science, or biostatistics.
- The scholarship is open to UK and EU students.

EU students who do not fulfil the ESRC’s residence eligibility criteria will be entitled to a Fees Only award (please check the ESRC’s residential guidelines at: https://www.sgsss.ac.uk/studentships/eligibility/). However, the University of St Andrews provides, on a competitive basis, maintenance stipends at the Research Council rate for EU PhD students who have been awarded a Research Council fees-only scholarship (and who start their degree in the academic year 2020-21).

Students must meet ESRC eligibility criteria. ESRC eligibility information can be found at - https://esrc.ukri.org-skills-and-careers-doctoral-training/prospective-students/
Award details
The scholarship is available as a +3 or a 1+3 programme depending on prior research training. This will be assessed as part of the recruitment process. The programme will commence in September 2020. It includes:
- an annual maintenance grant at the RCUK rate (2020/21 rate £15,285 full-time)
- fees at the standard Home rate
- students can also draw on a pooled Research Training Support Grant, usually up to a maximum of £750 per year

Other information
The mode of study is full time or part time.
The PhD student will be supervised by Dr Katherine Keenan (Geography), Dr Anne Smith (Biology) and Professor Matthew Holden (Medicine).

How to apply
The deadline is midday (British time) on 17 April 2020.

Download application form at - https://gradhub.sgsss.ac.uk/docs/116/ESRC-PhD-Studentship-Application-Form.docx

1. Applicants register on GradHub and fill out EO data (this is a requirement of the application process)
2. Applicants complete and upload the prescribed list of required documentation to include:
   - Application form
   - Academic transcripts
   - References
   - CV
   - A sample of academic writing
   - Personal statement in which you specify your interests in studying antimicrobial resistance and in applying advanced quantitative methods (Bayesian networks) to social science/ health data.
3. Applicants submit application through GradHub at https://gradhub.sgsss.ac.uk/students/login?ReturnUrl=%2ffForm.aspx%3fid%3d7067

Selection process
Applications will be ranked by a selection panel and applicants will be notified if they have been shortlisted for interview by 24 April. Virtual online interviews will take place on week of 4 May. All scholarship awards are subject to candidates successfully securing admission to a PhD programme within the University of St Andrews. Successful scholarship applicants will be invited to apply for admission to the relevant PhD programme after they are selected for funding.

Supervisor/Contact details
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