

Postdoctoral Research Fellow – NORFACE (Fixed Term 2 years)

£27,183 – £33,432 per annum

Southampton Statistical Sciences Research Institute

IMEM: Integrated Modelling of European Migration

Applications are invited from candidates with interests in Bayesian modelling of social data, for a two year postdoctoral research Fellowship within the Southampton Statistical Sciences Research Institute (<http://www.S3ri.soton.ac.uk>), University of Southampton.

The Southampton Statistical Sciences Research Institute has recently been awarded a NORFACE (New Opportunities for Research Funding Agency Co-operation in Europe) grant to develop an integrated model for estimating migration flows between countries in Europe.

The two-year postdoctoral research fellow will be responsible for developing a Bayesian model that brings together empirical data and expert judgements to better understand population movements in Europe. This position requires a PhD (or close to completion) with a strong statistical or mathematical component in a relevant discipline, such as statistics, maths, demography or economics.

The post will commence on 1st of November or as soon as possible thereafter. This is a fixed term position for 2 years.

For informal enquiries: Dr. James Raymer (telephone: +44 (0)23 8059 2935; email: raymer@soton.ac.uk).

The closing date for this position is 12 noon on 04 September 2009 and interviews are likely to take place during the week 21 September 2009. Please quote reference 3695-09-L on all correspondence. Applications to be submitted through the University's website, <http://www.jobs.soton.ac.uk/>.

Job Description and Person Specification (HR5)
 Post Number: 3695-09-L



Job Description						
School/Department:	Social Sciences / Southampton Statistical Sciences Research Institute					
Post Title:	Post-Doctoral Fellow					
Please enter Level under appropriate Career Pathway	ERE 4	TAE	MSA	CAO	R.Nurse	Clinical
ERE Category	Academic Posts			Non-Academic Posts		
	Academic (mixed)	Research only √	Teaching only	Enterprise	Education Development	
Posts Responsible to (and Level):	Dr James Raymer					
Posts Responsible for (and Level):	None					
Job Purpose: To undertake research as part of the project on 'Integrated Modelling of European Migration' funded by NORFACE (New Opportunities for Research Funding Agency Co-operation in Europe). This post-holder will make a significant contribution to the development, implementation and analysis of a Bayesian model for international migration between countries in Europe.						

Key Accountabilities/Primary Responsibilities (6-10 bullet points maximum)	% Time
<ul style="list-style-type: none"> Develop a Bayesian model, including literature review and programming in R or other equivalent software package 	65
<ul style="list-style-type: none"> Analyse input data and model outputs 	20
<ul style="list-style-type: none"> Write up and present findings 	10
<ul style="list-style-type: none"> Take an active part in project team meetings 	5

Internal & External Relationships: (nature & purpose of relationships)

- Internal: The postholder will work under the direction of Dr James Raymer in conjunction with other team members at Southampton, Professor Jonathan J. Forster, Professor Peter W.F. Smith and Dr Jakub Bijak. Also, as this post is part of Southampton Statistical Sciences Research Institute, the postholder will be expected to contribute to the activities of this Institute's seminars, conferences, etc.
- External: The postholder will be expected to liaise directly with the other two research institutes involved in this project, located at the University of Oslo in Norway and the Netherlands Interdisciplinary Demographic Institute in The Hague. This may involve travelling to attend project meetings.

Special Requirements: The position requires a willingness to travel within the UK and outside the UK to attend meetings and conferences.

Person Specification

Criteria	Essential	Desirable	How to be assessed
<p>Qualifications, Knowledge and Experience:</p> <p>PhD (or close to completion) with strong statistical or mathematical component in a relevant discipline (e.g., statistics, maths, demography, economics)</p> <p>Research experience in modelling migration or social data</p> <p>Research interests in Bayesian modelling</p> <p>Practical knowledge of Bayesian modelling</p>	<p>X</p> <p>X</p> <p>X</p>	<p>X</p> <p>X</p>	<p>Application</p> <p>Application and interview</p> <p>Application and interview</p> <p>Application and interview</p>
<p>Planning and Organising:</p> <p>Ability to plan and organise work independently and as part of a team</p> <p>Ability to work to deadlines</p>	<p>X</p> <p>X</p>		<p>Application and interview</p> <p>Application and interview</p>
<p>Problem Solving and Initiative:</p> <p>Ability to manage long term projects that involve programming and analysis</p> <p>Ability to find solutions to problems as they surface</p>	<p>X</p> <p>X</p>		<p>Application and interview</p>

Management and Teamwork: Ability to work as part of a team	X		Application and interview
Communicating and Influencing: Good oral and writing skills	X		Application and interview
Ability to collaborate in writing research reports	X		Application and interview
Other Skills and Behaviours: Proficient in the use of R, S-Plus or other equivalent statistical software	X		Application and interview
Word processing, internet and bibliographic search skills, spreadsheets (e.g. Excel) and bibliographic software (e.g. Endnote)	X		Application and interview
Special Requirements: Willingness to travel to meetings and conferences in the UK and abroad	X		Application and interview

Further Particulars

Postdoctoral Research Fellow – NORFACE (Fixed Term 2 years)

£27,183 – £33,432 per annum

Southampton Statistical Sciences Research Institute

IMEM: Integrated Modelling of European Migration

In order to fully understand the causes and consequences of international movements in Europe, researchers and policy makers need to overcome the limitations of the various data sources, including inconsistencies in availability, definitions and quality. At present, there has been little research on combining international migration data to provide overall pictures of population movements. So, how does one overcome these obstacles to obtain an overall and consistent picture of the migration patterns occurring within Europe? The proposed research seeks to answer this question by applying Bayesian methods to harmonise and correct for inadequacies in the available data and to estimate completely missing flows. The methodology will be integrated and capable of providing a synthetic data base with measures of uncertainty for international migration flows and other model

parameters. Having such a data base will allow us to better understand the underlying mechanisms and reasons for recent migration trends.

The advantages in having a consistent and reliable set of migration flows are numerous. Estimates of migration flows are needed so that governments have the means to improve their planning policies directed at supplying particular social services or at influencing levels of migration. This is important because migration is currently (and increasingly) the major factor contributing to population change. Furthermore, our understanding of how or why populations change requires reliable information about migrants. Without this, the ability to predict, control or understand that change is limited. Finally, countries will soon be required to provide harmonised migration flow statistics to Eurostat as part of a new regulation passed by the European Parliament. Recognising the many obstacles with existing data, Article 9 of the Regulation states that 'As part of the statistics process, scientifically based and well documented statistical estimation methods may be used.' Our proposed framework helps countries achieve this aim and provides measures of accuracy required for understanding the estimated parameters and flows.

This project is led by experienced researchers who have a good track record in handling and collecting migration data, quantifying demographic uncertainty, estimating migration patterns and statistical modelling, including methods to deal with inadequate or missing data. The Southampton team is responsible for the development of a Bayesian modelling approach to estimate international migration flows. This team consists of Dr James Raymer, Professor Peter WF Smith, Professor Jon Forster and Dr Jakub Bijak plus one full-time postdoctoral research fellow. Raymer and Bijak are experts in migration estimation and population modelling. Smith and Forster are statisticians who specialises in categorical data analysis and Bayesian modelling. Further details of their research interests can be found on S3RI's website: <http://www.s3ri.soton.ac.uk/staff/staff.php>. The project also involves researchers at the Netherlands Interdisciplinary Demographic Institute (NIDI) and the University of Oslo, who are responsible for the collection and assessment of international migration data and the quantification of uncertainty in the available data and expert judgements, respectively.