



The  
University  
Of  
Sheffield.

About  
The  
Job.

## School of Mathematics & Statistics

### Faculty of Science

### Research Associate

#### Overview

The selection of the BIOMASS mission as the 7<sup>th</sup> European Space Agency Earth Explorer mission opens a new era in measuring the properties and changes in the Earth's forests. This post is an exciting opportunity to contribute to the preparatory science programme for BIOMASS in three areas: (a) using existing and new spaceborne datasets to develop first estimates of global forest mortality based on spatial distribution of biomass; (b) exploiting Sentinel-1 data to estimate tropical deforestation and conversion to plantations, in concert with the facility for Climate and Environmental Monitoring from Space at Harwell and other UK teams; (c) collaborating with the world-leading UK expertise in tropical forest ecology and measurement to help establish the *in situ* and airborne calibration and validation strategy for BIOMASS. This will also involve work with other members of the international BIOMASS science team as the programme develops. The research will be carried out within the National Centre for Earth Observation, with funding also from the UK Space Agency, and will be based in the School of Mathematics & Statistics at the University of Sheffield with Professor Shaun Quegan as supervisor.

The National Centre for Earth Observation (NCEO) is a partnership of over 100 scientists from 26 institutions whose mission is to unlock the full potential of Earth observation data. The National Centre for Earth Observation is one of the Natural Environment Research Council's (NERC) family of centres. The NCEO collaborates closely with these centres, a range of NERC services and facilities, and with the wider academic community to deliver NERC's science strategy. <http://www.nceo.ac.uk/>

The UK Space Agency is an executive agency of the Department for Business, Innovation and Skills (BIS) and at the heart of UK efforts to explore and benefit from space. <http://www.bis.gov.uk/ukspaceagency>

The School of Mathematics & Statistics is one of the largest in the UK, composed of 47 academic staff, over 10 post-doctoral researchers, and in excess of 450 undergraduate and 90 postgraduate students. The School has a strong research ethos and an international reputation in research. Particular strengths lie in topology, number theory and algebra for Pure Maths; solar physics, particle astrophysics and environmental dynamics for Applied Maths; and in Probability and Statistics are probability, Bayesian statistics, statistical modelling and applied statistics. More information about the School, including information about our teaching and research activities is available at [www.shef.ac.uk/maths](http://www.shef.ac.uk/maths).

#### Job Description

## Main Duties and Responsibilities

- Use a range of satellite and *in situ* datasets, together with large scale carbon models, to investigate the links between biomass and forest mortality.
- Liaise with the UK community working in tropical forest ecology and forest monitoring to: (a) help develop the BIOMASS calibration and validation strategy, including the acquisition of necessary *in situ* data; (b) exploit current and upcoming satellites to develop a coherent approach to monitoring tropical deforestation, forest degradation, conversion to plantations and forest regrowth.
- Plan own research on timescales of 1-6 months, including timely delivery of milestones, within the constraints of the BIOMASS mission preparatory needs.
- Contribute to writing journal publications & reports.
- Contribute to support of UK Space Agency objectives with regard to BIOMASS.
- If given a particular direction to pursue, plan for own contribution up to three months ahead, incorporating issues such as the availability of resources, deadlines, project milestones and overall research aims.
- Be prepared to work independently, but also to recognise when advice and collaboration is needed to ensure progress, given the unpredictability of research.
- Plan well in advance to meet deadlines for journal publications and to prepare presentations and papers for meetings and conferences.
- Coordinate with other members of the NCEO, UK and international science teams to ensure objectives are met.
- Write supporting documents to contribute to and support the work of the Research Group, e.g. reports, interim reports and grant applications.
- Participate in group meetings and seminars
- Maintain a sound working knowledge of the relevant literature
- Carry out administrative roles as required
- Read academic papers and journals to keep abreast of developments..
- Perform any other duties commensurate with the grade of the post.

<b>Person Specification</b>			
	<b>Criteria</b>	<b>Essential</b>	<b>Desirable</b>
<b>Qualifications and experience</b>			
1.	PhD in scientific, mathematical and/or computing discipline or equivalent experience	X	
2.	Relevant experience in handling large scale environmental datasets, including data from remote sensing satellites,	X	
3.	Background knowledge in ecology		X
<b>Communication skills</b>			
4.	Excellent oral presentation skills.	X	
5.	Effective communication skills, both written and verbal.	X	
6.	Good interpersonal skills with colleagues.	X	
<b>Team working</b>			
7.	Ability to work as part of a team.	X	
<b>Problem solving and decision making</b>			
8.	Evidence of ability to react in a proactive manner when challenging questions arise.	X	
9.	Evidence of innovation in research.	X	
<b>Project management</b>			

10.	Ability to manage own research programme.	X	
<b>Personal effectiveness</b>			
11.	Have a good record of publications in international research journals with high impact factor.	X	
12.	Experience of working flexibly to achieve agreed goals, developing and maintaining a network of contacts throughout own work area.	X	
13.	Willingness and ability to learn and apply new methods and approaches.	X	

## Further Information

**This post is fixed-term** for three years.

### **This post is full-time.**

This role has been identified as a full-time post, but we are committed to exploring flexible working opportunities with our staff which benefit both the individual and the University. Therefore, we would consider flexible delivery of the role subject to meeting the business needs of the post. See [www.sheffield.ac.uk/hr/wellbeing/info/wlb.html](http://www.sheffield.ac.uk/hr/wellbeing/info/wlb.html) for more information.

**Terms and conditions of employment:** Will be those for Grade 7 staff.

**Salary for this grade:** £28,972 to £36,661 per annum depending on experience. Potential to progress to £40,046 per annum through sustained exceptional contribution.

More details on salaries, terms and conditions and our wide range of benefits for staff are available at [www.sheffield.ac.uk/jobs/salaries.html](http://www.sheffield.ac.uk/jobs/salaries.html)

**Closing date:** 12 December 2013

### **Informal enquiries:**

For all on-line application system queries and support, contact: [e-Recruitment@sheffield.ac.uk](mailto:e-Recruitment@sheffield.ac.uk).

For informal enquiries about this job and department, contact Professor Shaun Quegan at [s.quegan@sheffield.ac.uk](mailto:s.quegan@sheffield.ac.uk) or telephone +44 (0) 114 2223803.

## Selection – Next Steps

Following the closing date, you will be informed by email whether or not you have been shortlisted to be invited to participate in the next stage of the selection process. Please note that due to the large number of applications that we receive, it may take up to two working weeks following the closing date before the recruiting department will be able to contact you.

It is anticipated that interviews and other selection action will be held on Monday 16<sup>th</sup> December 2013. Full details will be provided to invited candidates.

**The University of Sheffield is committed to achieving excellence through inclusion**

The University of Sheffield is proud to be a Two Ticks employer  
[www.sheffield.ac.uk/hr/equality/support/twoticks/](http://www.sheffield.ac.uk/hr/equality/support/twoticks/)



The University has achieved the Athena SWAN award for Women in Science, Engineering and Medicine

