



## RESEARCH FELLOW

### School of Biological Sciences

**Closing date:** 13 April 2017

**Interview date:** TBC

**Reference number:** SBS013R



# Introduction

This project is funded by the Natural Environment Research Council and involves collaboration with Dr Cécile Gubry-Rangin and Professor Jim Prosser, University of Aberdeen, Professor Ute Skiba and Dr Robert Griffiths, Centre for Ecology and Hydrology.

This project integrates with a large NERC consortium grant “Biodiversity, Ecosystem Functions and Policy across a Tropical Forest Modification Gradient”. This project will advance our understanding of the links between biodiversity and ecosystem function in human modified tropical forests. Tropical forests support over two-thirds of the world’s terrestrial biodiversity. However, between 35% and 50% of all closed-canopy tropical forests have already been degraded, and secondary forests, plantation mosaics and other human-modified habitats will dominate tropical landscapes. This leads to concerns that these anthropogenic alterations will elevate greenhouse gas (GHG) emissions and jeopardise ecosystem service provision at local, regional and global scales.

In this context, one of the main objectives of this consortium is to explore the relationship between the structure and composition of soil microbial communities and biogeochemical cycles and fluxes. Little is known about GHG fluxes from soil and litter in tropical forests or about the links between GHG fluxes and microbial communities. These knowledge gaps make it difficult for developing countries in the tropics to develop effective mitigation strategies. We will therefore investigate changes in the active soil microbial communities responsible for generating GHG fluxes between different land-use strategies using next generation sequencing of the global soil metatranscriptomes. This project represents novel, high-quality fundamental and applied science and will provide essential insights to guide management strategies and policy with the ultimate aim of mitigating the loss of biodiversity and ecosystem function in human-modified tropical forests.

## Job description

### *Main purpose of the role:*

You will be responsible for the planning, design and execution of the research programme and will ideally have expertise in soil molecular ecology, metatranscriptomics, quantitative analysis of high-throughput sequence data and an interest in ecological concepts and theory.

You will join a highly active research group which currently includes two post-doctoral researchers, five PhD students and one research technician. The group occupies purpose-built molecular biology laboratories and possesses all the necessary infrastructure and equipment for performing research at the forefront of molecular microbial ecology and environmental genomics.

The research of the group focuses on the ecology, evolution and ecosystem function of microbial communities and on the use of molecular techniques to characterise natural communities of microorganisms in soil and in aquatic environments. This research has uncovered novel microbial groups involved in biogeochemical cycling processes, in particular nitrification, which plays a central role in the global nitrogen cycle. Major recent findings include demonstration of the role of archaea in soil ammonia oxidation; demonstration of the global distribution of archaeal ammonia oxidisers in relation to soil pH; isolation of the first obligate acidophilic ammonia oxidiser; analysis of phenotypic evolutionary diversification of archaeal ammonia oxidisers; nitrous oxide emissions in soil bacterial and archaeal ammonia oxidisers; and isolation of the first non-ammonia oxidiser Thaumarchaeota through single-cell genomics. Recent publications of the group can be found at <http://www.abdn.ac.uk/sbs/people/profiles/c.rangin/?publications> and <http://www.abdn.ac.uk/sbs/people/profiles/j.prosser/?publications>.

## *Key responsibilities:*

### **Research Fellow**

- Performs RNA extraction and metatranscriptomic analysis of soil samples from soil microcosms.
- Performs bioinformatic and statistical analyses of sequence data.
- Determines major microbial players in tropical greenhouse gas emissions.
- Maintains and expands knowledge and experience through CPD.
- Establishes and maintains links with colleagues and external contacts through active participation in research.
- Participates in the School research events and attends research seminars, conferences, staff development workshops and liaises with experts in the field.

### **At a glance**

**Salary:**

Grade 6, £32,004 per annum

**Hours of work:**

Full-time

**Contract type:**

Project limited (12.5 months)

## Candidate background

*We seek individuals who relish the opportunity to be involved with research within a vibrant research-led academic unit.*

We are seeking to appoint a Research Fellow who has a PhD (or near completion) in Microbial Ecology or Bioinformatics. You must have experience of using molecular biology techniques and expert knowledge of their application in microbial ecology.

You will join a highly active research group which currently includes two post-doctoral researchers, five PhD students and one research technician. The group occupies purpose-built molecular biology laboratories and possesses all the necessary infrastructure and equipment for performing research at the forefront of molecular microbial ecology and environmental genomics.



## Terms of appointment

Salary will be at £32,004 per annum on the Grade 6 salary scale.

Consideration will be given to making an appointment at Research Assistant level Grade 5 £30,175 per annum for individuals in the final stages of completing their PhD.

As this post is externally funded by NERC, it will be offered for a period of 12.5 months or until 30 September 2018.

Any appointment will be made subject to satisfactory references and a 12 month probation period.

For further information on various staff benefits and policies please visit [www.abdn.ac.uk/staffnet/working-here](http://www.abdn.ac.uk/staffnet/working-here)

Should you require a visa to undertake paid employment in the UK you will be required to fulfil the minimum points criteria to be granted a Certificate of Sponsorship and Tier 2 visa. As appropriate, at the time an offer of appointment is made you will be asked to demonstrate that you fulfil the criteria in respect of financial maintenance and competency in English. Please do not hesitate to contact Mrs Marian Elliott-Jones, HR Adviser ([m.elliott-jones@abdn.ac.uk](mailto:m.elliott-jones@abdn.ac.uk)) for further information.



# Person specification

	<i>Essential</i>	<i>Desirable</i>
<p><b>Education/Qualifications</b> Academic, technical and professional education and training</p>	<ul style="list-style-type: none"> <li>• PhD (or near completion) in Microbiology, Bioinformatics or Ecology.</li> <li>• Undergraduate Degree in Microbiology, Molecular Biology, Ecology, Bioinformatics or related subject.</li> </ul>	
<p><b>Work and Other relevant experience (including training)</b> eg Specialist knowledge, levels of experience, supervisory experience, research</p>	<ul style="list-style-type: none"> <li>• Use of molecular biology techniques and expert knowledge of their application in microbial ecology</li> </ul>	<ul style="list-style-type: none"> <li>• Experience with high-throughput sequencing techniques</li> <li>• Experience of bioinformatic analysis of high-throughput sequence data</li> <li>• Experience in metatranscriptomics</li> <li>• Knowledge of microbial greenhouse gas emissions</li> </ul>
<p><b>Personal qualities and abilities</b> eg initiative, leadership, ability to work on own or with others, communication skills</p>	<ul style="list-style-type: none"> <li>• Ability to work on own and integrate with and contribute to an active research group</li> <li>• Excellent verbal communication skills</li> <li>• Excellent written communication skills, including a capacity to write up results in a publishable form</li> </ul>	<ul style="list-style-type: none"> <li>• Good quantitative and bioinformatics skills</li> </ul>
<p><b>Other</b> eg special circumstances (if any) appropriate to the role such as unsocial hours, travelling, Gaelic language requirements etc.</p>		

# The University

*Founded in 1495, Aberdeen is Scotland's third oldest University and the fifth oldest in the UK. Ranked within the world top 140 in the recent QS global league table, Aberdeen is the 'global University of the north'.*

Aberdeen is a broad based, research intensive University, which puts students at the head of everything it does. It has significant academic strengths and potential across a wide variety of disciplines. Outstanding in a wide range of discipline areas across the entire research spectrum, Aberdeen has also been credited for its international reach and its commercialisation of research ideas into spin out companies.

The University has over 14,000 matriculated students and 3,600 staff representing 120 nationalities. We encourage bold thinking, creativity and innovation and we nurture ambition with many opportunities for professional and personal development in an inclusive learning environment which challenges, inspires and helps every individual to reach their full potential.

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## *The University is structured into Academic Colleges:*

- The College of Life Sciences and Medicine
- The College of Physical Sciences
- The College of Arts and Social Sciences
- The Business School

The University combines a distinguished heritage with a forward looking attitude. In the past few years, the University has encouraged creativity in its academic staff, broken new ground with an innovative curriculum, and developed state-of-the-art facilities including the new Sir Duncan Rice Library and the Aberdeen Sports Village and Aquatics Centre. In looking to the future, the University seeks to enhance its reputation as one of the world's leading Universities by moving forward with ever more ground breaking research; ensuring students have an intellectual and social experience second to none; and capitalising upon the dual role as one of the major institutions of the north and as a cornerstone of regional economic and cultural life.

# The city and the region

## *Aberdeen and Aberdeenshire*

Aberdeen is world renowned as the oil capital of Europe and the region is both the agricultural heartland of Scotland and a hub of the food and drink industry.

With the population approaching 230,000, Aberdeen is big enough to provide all the advantages of city life, yet compact enough to enjoy the more intimate atmosphere usually associated with small towns.

Aberdeenshire is one of Scotland's most appealing regions. Royal Deeside and the Cairngorms National Park are within easy access of the city, and there are a variety of towns and villages scattered along the coastline.

Aberdeen and Aberdeenshire cater for a wide range of tastes in sporting and cultural activities.

To find out more about Aberdeen and Aberdeenshire go to [www.VisitScotland.com](http://www.VisitScotland.com)



## How to apply

Online application forms are available at [www.abdn.ac.uk/jobs](http://www.abdn.ac.uk/jobs)

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The closing date for receipt of applications is **13 April 2017**

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Should you wish to make an informal enquiry please contact Dr Cecile Gubry-Rangin (Tel: 01224 273662 or e-mail: [c.rangin@abdn.ac.uk](mailto:c.rangin@abdn.ac.uk))

Please do not send application forms to Dr Cecile Gubry-Rangin.

**Please quote reference number SBS013R on all correspondence**

*The University pursues a policy of equal opportunities in the appointment and promotion of staff.*

