

Postdoctoral Research Opportunities (2 Posts)

Remote Sensing of Fires and Biomass Burning Emissions

Applications are invited for two research positions in *Remote Sensing of Active Fires and their Associated Trace Gas and Aerosol Emissions*, to be based in the **Environmental Monitoring & Modelling Research Group, Department of Geography, KCL** (<http://www.kcl.ac.uk/schools/sspp/geography/research/emm>).

Post A will work primarily on a European Commission funded project aiming to enhance understanding of the carbon budget and dynamics of the African continent. The KCL component of the multinational CARBOAFRICA project is targeted at elucidating the function, scale and importance of African wildfires/biomass burning. The key method to be used is remote sensing, and the aim is to improve current inventories of emitted carbon, trace gases and aerosols from the continents forest and grassland fires. The project will combine and integrate satellite observations of active fires, fire radiative power, burned area, aerosol and fire-emitted trace gases (e.g. CO), and involves collaboration with fire modellers and possibility for data assimilation methods. There is scope for the researcher to further develop use of ground-based remote sensing methods (UV-DOAS and FTIR) for analysis of fire plume chemistry. The postholder will join an established research team, and for candidates with appropriate experience the exact work breakdown will be open to discussion depending on their interests. The post will be London-based, with fieldwork and meetings in Africa/Europe, and links to the research of other CARBOAFRICA project partners on prognostic fire modelling and flux-tower/airborne measurement (CARBOAFRICA: http://dwms.fao.org/temp/carboafrika/index_en.asp).

Post B will work primarily on a UK National Environmental Research Council (NERC) - funded project 'GEOFIRE' developing a new system for real-time quantification of global biomass burning that is based on the detection and quantification of active fires in data from the 'global' suite of geostationary satellites. The post will be based at KCL in London, where the GEOFIRE system will be developed, but will ultimately be implemented operationally at the UK Meteorological Office in Exeter. Extended periods will therefore be spent in Exeter during the later stages. The post holder will work with the Met. Office and European collaborating institutions to incorporate derived emissions estimates into models of atmospheric transport and evaluate the impact of their assimilation in the estimation of, amongst other parameters, atmospheric trace gas and aerosol concentrations. The post holder joins an established research team and examples of the data types to be delivered by GEOFIRE are at <http://www.kcl.ac.uk/schools/sspp/geography/people/acad/wooster/research.html>

KCL is situated in the heart of London and both posts are offered at level RA1A (currently £20,645 to £27,264 per annum depending on post, qualifications and level of experience, plus £2,323 London Allowance per annum). Positions will be for 20-24 months in the first instance, depending on the post and candidate entry level, with the possibility of extension subject to further funding. Post A is available from early 2007, and post B April 2007 (but there may be a possibility to negotiate the start date).

Requirements for both posts:

- ?? Significant past research experience in earth observation/remote sensing and/or the integration of such data in environmental models. Candidates will ideally be qualified to PhD level in a relevant area and have some postdoctoral experience, but for Post A candidates with other significant relevant research experience will also be considered.
- ?? Excellent computing ability and ability to code software. Knowledge of IDL and statistical testing.
- ?? Proven skills in handling large datasets and in research communication.

Past experience in remote sensing of biomass burning and/or the associated emissions is highly desirable, and knowledge of simulation modelling and data-fusion/model-data assimilation methods would be advantageous.

Candidates for Post A would benefit from additional experience in ground- or satellite- IR or UV spectroscopy.

Candidates for Post B would benefit from experience in systems development involving large data demands.

In addition to their primary work, opportunities may exist for both post-holders to gain wider fire research experience, including with ongoing field research projects overseas and in the UK.

Applications Process:

Informal enquires regarding either post are welcome, and can be made to Professor Martin Wooster (martin.wooster@kcl.ac.uk). Application instructions, detailed candidate requirements and further particulars can be obtained by post from the Personnel Department, King's College London, London, WC2R 2LS, by email, strand-recruitment@kcl.ac.uk or by fax (44) 207 848 1352. Please quote reference number W1/DAR/154/06 for Post A and W1/DAR/155/06 for Post B.

Candidates can ask to be considered for one or both positions. Application deadline is 13 December 2006.

Equality of opportunity is College policy.