

Research Associate in Water and Energy Forecasting

Department	Electronic and Electrical Engineering (www.strath.ac.uk/eee/)		
Faculty	Faculty of Engineering (www.strath.ac.uk/engineering/)		
Staff Category	Research	Reference No	213643
Reports To	HoD through Dr Jethro Browell	Grade:	7
Salary Range:	£32236 - £39609	Contract Type:	Fixed Term (7 months)
FTE	I (35 hours/week)	Closing Date	26/05/2019

Job Advert

The University of Strathclyde in Glasgow possesses a large internationally rated Faculty of Engineering with a proud history of successful joint ventures with industrial and enterprise partners. As 'the place of useful learning' the University is committed to the advancement of society through the pursuit of excellence in research, education and knowledge exchange, and through creative engagement with partner organisations at local, national and international levels.

The Departments of Civil and Environmental Engineering and Electronic and Electrical Engineering, in partnership with a leading utility company with a significant amount of hydropower, seek to appoint a research associate in water and energy forecasting. This position forms part of an established strategic partnership between the University, SSE, ScottishPower and Wood called the *Low Carbon Power and Energy (LCPE)* program. The LCPE is a high-profile programme funding excellent collaborative research projects between academia and industry, looking to develop new technologies for exploitation.

This role will involve analysing and post-processing sub-seasonal-to-seasonal (S2S) weather forecasts to develop novel water resource forecasts for hydropower applications. You will be supported by an experienced academic team with expertise in hydrology, numerical weather prediction and energy forecasting, and an industrial partner.

Under the guidance of the academic team, you will analyse the skill of sub-seasonal-to-seasonal (S2S) weather forecasts with a focus on hydrology and precipitation in Great Britain, and develop post-processing techniques in order to produce forecasts to support hydropower operations, in cooperation with the industrial partner. In particular, you will be expected to write code to implement various forecast verification and post-processing tasks, produce high-quality visualisations, and develop novel solutions where necessary. This may include both technical and practical aspects relating to forecast products, software, and user requirements. You will be involved with frequent interaction with industry, report and academic paper writing, as well as wider dissemination and stakeholder engagement.

To be considered for this role, you will be educated to a minimum of PhD level in an appropriate discipline, or have significant relevant experience in addition to a relevant degree. You should have demonstrable data analysis and coding experience. Whilst not essential experience within a relevant meteorological and/or hydropower environment is highly desirable, along with experience of high performance computing; training in the University's HPC facility will be provided. Applicants should have experience in delivering technical reports both written and oral. You will have an ability to plan and organise your own workload effectively and an ability to work within a team environment. You will have excellent troubleshooting skills, including a methodical approach to solving complex problems, and the ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences.

Job Description

Brief Outline of Job:

To undertake a specific research project/s under the general guidance of a research leader; to establish a personal research portfolio and plan research proposals, with assistance from senior colleagues as required; to engage where required in relevant teaching, professional and knowledge exchange activities; and input to administrative activities

Main Activities/Responsibilities:

1.	As part of the LCPE programme group, develop research objectives and proposals for own or joint research and play a lead role in relation to a specific project, with guidance from senior colleagues as required.
1.	Under guidance from the Academic Team you will analysis and verification of S2S Weather Forecasts to develop post-processing techniques.
2.	Conduct individual and/or collaborative research relating to modelling and forecasting hydro power water resource.
3.	Communicate research to academic and industrial collaborators, including writing technical reports.
4.	Scope and review technology solutions to assist identification, review, survey and reporting process.
5.	Conduct literature reviews and gather information for the project and external partners.
6.	Work closely with the utility partner and assist the practical implementation of the project outputs.
7.	Plan and manage own workload, with guidance from the Team Lead or Project Lead as required.
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Person Specification

Educational and/or Professional Qualifications

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

E1 Good first degree and PhD (or equivalent professional experience) in appropriate discipline (i.e. Civil, Civil and Environmental Engineering, Electrical Engineering, Meteorology/Hydrology/Climatology, Applied Mathematics).

D1 Membership of relevant Chartered/professional bodies (including Higher Education Academy).

Experience

E2 Knowledge of numerical weather prediction (NWP) systems, data structures and characteristics.

D2 Knowledge of hydropower systems, operating and environmental characteristics.

D3 Experience working with sub-seasonal-to-seasonal and/or other ensemble NWP products.

D4 Relevant working experience in power and energy or water-environment sectors.

D5 Sufficient breadth or depth of knowledge in the relevant discipline/s to effectively contribute to wider research programmes.

Job Related Skills and Achievements

E3 Competency in a scripting language (python/R/MATLAB/similar) and analysis of weather data.

D6 Competency in use of high performance computing.

E4 Demonstrable experience in delivering research projects in a timely manner.

Personal Attributes

E5 Excellent interpersonal and communication skills, with the ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences.

E6 Excellent verbal and written communication skills with an ability to interact with a range of audiences.

E7 The ability to work both independently and as part of team.

E8 Ability to plan and organise own workload effectively, with evidence of having successfully completed research tasks to both interim and final milestones.

E9 Creativity, initiative and rigour in problem solving.

Other Relevant Factors

E10 Demonstrable experience in delivering research projects in a timely manner.

Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted before interview without further permission, unless you indicate that you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter detailing the knowledge, skills and experience you think make you the right candidate for the job. Applicants should also complete the Equal Opportunities Monitoring Form.

Other Information

Further information on the application process and working at Strathclyde can be found on our website (<http://www.strath.ac.uk/hr/workforus>).

Informal enquiries about the post can be directed to Dr Chris White, Senior Lecturer (chris.white@strath.ac.uk).

Rewards and Benefits

Our staff have access to a wide range of outstanding benefits that include financial rewards, family friendly and wellbeing benefits and career development opportunities, details of which can be found [here](#).

Conditions of Employment

Conditions of employment relating to the Research staff category can be found at: [Conditions of Employment](#).

Probation

Where applicable, the successful applicant will be required to serve a 9 month probationary period.

Pension

The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from [Payroll and Pensions](#).

Interviews

Formal interviews for this post will be held on 18/06/2019.

Equality and Diversity

We value diversity and welcome applications from all sections of the community.

The University currently holds a Bronze Athena SWAN award, recognising our commitment to advancing women's careers in science, technology, engineering, maths and medicine (STEMM) employment in academia.

University Values

The University's Values capture what we're all about: who we are, what we believe in and what we stand for. [Our Values](#) have been derived from how we act and how we expect to be treated as part of Strathclyde.

