



Candidate Information

Position:	Research Fellow - Energy, Spatial and Socioeconomic
School/Department:	Mechanical & Manufacturing Engineering
Reference:	22/109770
Closing Date:	Friday 6 May 2022
Salary:	£34,304 per annum.
Anticipated Interview Date:	Wednesday 25 May 2022
Duration:	Fixed-term available until 30/06/2024

JOB PURPOSE:

The postholder will be an integral part of Dr Foley's team and will be based in the Energy, Power, and Intelligent Control (EPIC) team in the School of Electronics, Electrical Engineering and Computer Science. Key duties will involve the planning and delivery of the Centre's objectives which include expanding interdisciplinary connections, building the research portfolio both in terms of income and high-quality publications, creating impact through engagement with industry and local communities and supporting wider public engagement initiatives. In particular, the postholder will deliver and support projects to examine the potential of satellite remote sensing data in energy poverty prediction using machine learning combined with socioeconomic survey data in response to these challenges.

MAJOR DUTIES:

1. Develop and execute research deliverables in accordance with the other partners with emphasis on machine learning, incorporating geographical and environmental variables to predict energy poverty with a quantifiable accuracy.
2. Develop a model that predicts the "access to electricity" component of energy poverty in Northern Ireland, including the capability to predict future energy poverty.
3. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to the areas of research developed.
4. Present regular progress reports on research to key stakeholders to disseminate and publicise research findings in close co-ordination with the industrial partners.
5. Prepare, in consultation with the project supervisors and stakeholders, material for publication in esteemed national and international journals and presentations at international conferences.
6. Support EPIC Lab, support PhD students, including assessing and contributing to training requirements, providing advice as requested on their individual research projects and carry out occasional undergraduate supervision.
7. Assist the grant holder in the preparation of funding proposals and applications to external bodies.
8. Carry out routine administrative tasks associated with the research centre to ensure that deliverables are completed on time and within budget.
9. Travel to meetings and conferences in the UK, Ireland and elsewhere in the world deemed necessary to undertake the research and associated project work.

ESSENTIAL CRITERIA:

1. Have a PhD or about to receive a PhD in Mechanical, Electrical, Civil, or related engineering field.
2. Three years recent relevant research experience to include demonstrable industry experience in engineering and project management.
3. Track record of publication appropriate to career stage.
4. Experience in modelling one or more of energy systems, power networks, or equivalent.
5. Experience of leading laboratories and tutorials.
6. Strong numerical modelling experience and knowledge of current approaches to modelling energy systems.
7. Evidence of contributing to the broader management and administrative processes in current research group.
8. Evidence of outreach and dissemination as demonstrated by links with industry, institutes, community groups etc.

9. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
10. Excellent software skills e.g., MS Office, programming tools such as Dlgilent, ETAP, PowerWorld, ArcGIS, Python, MATLAB, OriginLAB.
11. Ability to communicate complex information clearly.
12. Ability to build contacts and participate in internal and external networks.
13. Good time keeping, interpersonal and communications skills.
14. Ability to work to deadlines, manage work load and complete tasks and take initiative to complete tasks effectively.
15. Ability to assess and organise resources.

DESIRABLE CRITERIA:

1. Relevant process modelling qualifications.
2. Experience of modelling the interaction of complex systems.
3. Supervision of undergraduate students on project level.
4. Experience of working on an industry lead project or project with considerable industry input, working in a multi-institutional, interdisciplinary and international team.
5. Contribution to field through attendance at conferences, chairing any sessions at conferences and any journal activities such as reviewing and support of editorial activities.