



Research Centre:	The Water Institute, Dublin City University
Post title:	Research Fellow - Environment Monitoring and Sensing Infrastructure
Level on Framework:	Level 2
Post duration:	Fixed Term Contract up to 24 Months

Research Career framework

As part of this role the researcher will be required to participate in the [DCU Research Career Framework](#). This framework is designed to provide significant professional development opportunities to researchers and offer the best opportunities in terms of a wider career path. DCU has a strong track record in attracting both Irish and European Union research funding under Horizon 2020 (and all previous Framework Programmes), Marie Curie Actions and Erasmus. We offer a dynamic and internationally-focused environment in which to advance your academic career.

Background & Role Profile

Now, more than ever, we need high-quality, timely information about our farms, forests, natural wetlands and cities in order to better understand the interdependencies and interactions between the human activities and natural processes that create these complex environments.

This SFI funded project in the area of climate action will tackle this challenge through the innovative fusion of multi-thematic data-sources captured from spaceborne satellites, aerial/drone platforms, in-field instruments, in-situ sensor networks and mobile devices with existing databases, on land use and population, using highly automated machine learning workflows to extract terrestrial features, patterns and processes – essential to understanding and managing these environments. Integrated land-surface models, capable of handling uncertainty, will utilise these AI outputs together with land-cover type, biomass and environmental variables to produce improved estimates of carbon stocks and exchanges.

We are seeking candidates with skills in environmental sensing to work on this project. The post will involve site selection, optimisation of siting sensors, network design for sensor deployment and maintenance of equipment.

The objective of this research is to develop a digital data platform capable of integrating, analysing and visualising large volumes of Earth observation data, including from satellites, drones and on-site measurements. As part of this broader vision, the Research Fellow will be required to deliver on a body of work relating to **Instrumentation & Surveys** on sensor selection of sites, network design, deployment, and maintenance of sensors. Knowledge of a broad range of sensor platforms and a hierarchy of survey technologies and sensors will be required. The fellow will feed into work packages on soils and anomaly detection & scenario analysis in relation to data from existing and new sensors and other platforms. A broad set of skills are required with adequate field experience. Specifically, sensor engineering and integration: performance, sensor design and communications, transduction methods, sensor data validation for environmental parameters.

Duties and Responsibilities:

Please refer to the job description for a full list of duties and responsibilities associated with this role.

Qualifications and Experience:

Applicants should have a PhD in environmental monitoring, optical sensing, sensor engineering and deployment, environmental engineering, or related area. Applicants should also have a minimum of 4 years relevant postdoctoral/industry-related research experience or equivalent at post-doctoral researcher level.

In addition, it is desirable that the candidate has a subset of the following skills:

- Knowledge of sensor design, integration, transduction.
- Ability to work in a team-based environment and with stakeholders/partners.
- Ability to conduct multi-disciplinary research and understanding of various domains particularly terrestrial and climate related issues.
- Motivated and proactive attitude, willing to take ownership and initiative in all work assignments.
- Excellent Investigative and problem-solving skills.
- Excellent communication skills, verbal and written (English).
- Creative Thinking.
- Evidence of leadership within a group
- Evidence of funding success and publishing record

The ideal candidate will also have:

- Experience in research collaborations with industry.
- Field work experience
- Sensor deployment and maintenance experience
- Test and demonstration of sensors
- Site assessment in preparation for deployments
- Knowledge of data management platforms - excel, R and data manipulation

- Knowledge of satellite and aerial platform technologies and their integration into a monitoring system.

Candidates will be assessed on the following competencies:

Discipline knowledge and Research skills – Demonstrates the ability to design and implement part of a programme of research (for example by using critical thinking and the application of relevant research methodologies).

Understanding the Research Environment – Demonstrates a thorough understanding of the research environment both nationally and internationally and the ability to contribute substantially to grant applications.

Communicating Research – Demonstrates the ability to communicate their research effectively to the research community and wider society (for example by publishing their research in high quality peer reviewed journals) and the ability to teach and tutor students.

Managing & Leadership skills - Successfully manages research projects including the management and supervision of postgraduates and/or junior research staff.

Salary Scale: Research Fellow Scale: €55,811 – €60,814

Appointments will be commensurate with qualifications and experience and will be made on the appropriate point of the salary scales, in line with current Government pay policy.

Closing Date: Thursday 26th of November 2020

Informal enquiries should be directed to:

Professor Fiona Regan, Director, Water Institute, DCU, Dublin 9, Ireland.

E-mail: Fiona.regan@dcu.ie

Tel: 01 700 5765

Please do not send applications to this email address, instead apply as described below.

Application Procedure

Application forms are available from the DCU Current Vacancies website at <https://www.dcu.ie/hr/vacancies/current.shtml>.

Applications must be submitted by e-mail to hr.applications@dcu.ie

Please clearly state the role that you are applying for in your application and email subject line:
Job Ref #RF1439 Research Fellow - Environment Monitoring and Sensing Infrastructure

Dublin City University is an equal opportunities employer and is committed to promoting gender equality reflected in its attainment of the Athena SWAN Bronze Award. Information on a range of university policies aimed at creating a supportive and flexible work environment are available at www4.dcu.ie/policies/policy-starter-packs.shtml.