

Postdoctoral Researcher/Research Associate – Climate Flood Modelling
College of Science and Engineering
NUI Galway
Ref. No. NUIG RES 040-22

Applications are invited from suitably qualified candidates for a full-time fixed term position as a Postdoctoral Researcher with Civil Engineering at the National University of Ireland, Galway. This position is funded by The Environmental Protection Agency, Ireland, and is available from 31st of March 2022 to contract end date of 30th of March 2023.

Project Description:

Extensive research exists demonstrating that flooding has increased in frequency in recent decades, fuelling concern that climate change is already influencing flood risk. Projected increases in rainfall, sea level and storm winds are likely to escalate the risk of flooding in the future. Consequently, an in-depth understanding of flood mechanisms and extent under various Shared Socioeconomic Pathways are needed to evaluate the economic, social and environmental effects of climate changes.

In this context, the aim of this research project is to generate a significant step forward in our understanding of conditions under which coastal-fluvial floods occur, and to quantify extent of flood inundation under various climate scenarios and combinations of flood drivers. Cork City, a coastal urban agglomeration of the south of Ireland is a study case. In this project a state-of-the-art numerical flood model will be employed to produce maps of inundation in Cork City under various climate scenarios. The model will be used to simulate spatial and temporal evolution of flood inundation under current hydrological stressors and future stressors for a range of future climate scenarios. The inundation maps will be used for socio-economical assessment carried out by project partners.

Job Description:

The successful candidate will be based at the National University of Ireland Galway and contribute towards a recently awarded project in the field of Climate Change Modelling and Climate Resilient Development. The project is aimed at quantifying the extent of coastal-fluvial flood inundation in urban zones under various climate scenarios and combinations of flood drivers. The successful candidate will work in a multidisciplinary team with colleagues in Civil Engineering Department and the Centre for Economic Research on Inclusivity and Sustainability (CERIS) at the National University of Ireland, Galway.

Duties:

- Conduct research (both independently and as part of a team) in the area of high-resolution hydrodynamic modelling of fluvial-coastal floods.
- Perform statistical analysis of extreme events.
- Produce output maps in GIS environment.
- Contribute to the writing of scientific papers and reports for international journals and progress reporting to other researchers and industry partners.
- Assist with the coordination of research activities and actively contribute to research outputs to meet project milestones.

- Participate in and/or present at conferences and/or workshops relevant to the project as required.
- Assist with the supervision of PhD and research students.

Qualifications/Skills required:

Essential requirements:

- PhD (or be near to completing a PhD) in mathematics, physics, oceanography, engineering or related area.
- Demonstrated experience with numerical models (e.g. hydrodynamic models).
- Demonstrated experience in statistical/probabilistic analysis.
- Demonstrated ability to work in a team, collaborate across disciplines and build effective relationships.
- Demonstrate excellent communication skills in English.

Desirable requirements:

- Competence in a GIS environment.
- Experience in working with hydrodynamic/hydraulic/hydrology codes.
- Programming skills sufficient to adapt and/or modify existing models.
- Proven track record in using one or more scripting languages, e.g. MATLAB, Python or similar.
- Demonstrated ability to conduct independent research with limited supervision.
- Demonstrated track record of publications and conference presentations relative to opportunity.

Salary: €39,132 - €41,525 per annum, pro rata.

Start date: Position is available from 31st of March 2022.

Continuing Professional Development/Training:

Researchers at NUI Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans.

NUI Galway provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Researcher Development Centre (RDC) upon commencing employment - see www.nuigalway.ie/rdc for further information.

Further information on research and working at NUI Galway is available on Research at NUI Galway

For information on moving to Ireland please see www.euraxess.ie

Further information about School of Engineering is available at <http://www.nuigalway.ie/engineering-informatics/postgraduatestudents/researchprogrammes/>



HR EXCELLENCE IN RESEARCH

Informal enquiries concerning the post may be made to Dr. Indiana Olbert:
Indiana.olbert@nuigalway.ie

To Apply:

Applications to include a covering letter, CV, and the contact details of three referees should be sent, via e-mail (in word or PDF only) to Dr. Indiana Olbert: indiana.olbert@nuigalway.ie

Please put reference number **NUIG RES 040-22** in subject line of e-mail application.

Closing date for receipt of applications is 5.00 pm 1st March 2022

Due to the University closure related to COVID-19, interviews may have to take place virtually and start dates may need to be delayed.

We reserve the right to re-advertise or extend the closing date for this post.

National University of Ireland, Galway is an equal opportunities employer.

All positions are recruited in line with Open, Transparent, Merit (OTM) and Competency based recruitment