

1-year funded MSc position

Department of Geography
Environmental Research Institute
University College Cork (UCC)

Job Posted: 05 March 2024

Closing Date for Applications: 29 March 2024 at 5pm (local) Irish time

School: Department of Geography, School of the Human Environment

Contract Type: Fixed Term Full-Time

Job Type: Research

Salary: €25,000 per annum plus fees

Methodological Advances to Trace Past CH₄ (MATCH₄)

Applications are invited from suitably qualified candidates for a full-time MSc in the Department of Geography at UCC on 'Methodological Advances to Trace Past CH₄ (MATCH₄)'. The MATCH₄ project is funded by the Geological Survey Ireland. The project is in collaboration with the School of Natural Sciences, Botany Discipline at Trinity College Dublin (TCD) and the Institute of Biology at Neuchâtel University (NU, Switzerland).

Project Description

Peatlands represent a globally significant carbon store and have been a persistent carbon sink over millennia, yet this carbon is vulnerable to climatic and anthropogenic disturbances. Undamaged peatlands remove carbon dioxide (CO₂) from the atmosphere and sequester a fraction in accumulating peat under waterlogged conditions; however, this also promotes methane (CH₄) production. Degraded peatlands can switch from effective CO₂ sinks to major sources of this gas, with a reduced output of CH₄. There is a clear trade-off between CO₂ sequestration and CH₄ release, which is dependent on complex eco-hydrological processes driven by climate change and anthropogenic activity. It is unclear how future climate change will drive carbon storage and greenhouse gas emissions from peatlands.

Reliable estimates of current and past peatland CH₄ fluxes is key to determine their impact on future climate. Peatland archives can be explored to improve our understanding of CH₄ emissions on multi-decadal to centennial timescales. The overarching aim of MATCH₄ is to provide insights into the role of long-term CH₄ release, climate change, and carbon storage in peatlands. The project will develop and employ a novel approach to bridge an important gap between the geological records and real-time GHG measurements.

C-UISCE Project Team

The project will be supervised by Dr Michelle McKeown (UCC), Dr Matt Saunders (TCD), Prof Edward Mitchell (NU), and Ms Camille Vögeli (NU).

Candidate Attributes

Candidates should hold a first (1.1) or second class (2.1) honours degree (or equivalent) in Geography, Ecology, Environmental Science, Geoscience or equivalent. They will be expected to conduct fieldwork around Ireland and should hold a full driving licence. The candidate is also expected to present at national and international conferences.

Salary: The MSc is fully funded for 1 year, carrying a stipend of €25,000 per annum plus fees.

Start date: Ideally 1st April 2024

Further Information

Dr Michelle McKeown, Department of Geography, University College Cork (UCC), Cork City, Ireland. Email: mmckeown@ucc.ie

Application Procedure

Please submit an electronic copy of Cover Letter and Curriculum Vitae with 2 referees' contact details and a letter stating your interest and suitability for the MSc position to:
Dr Michelle McKeown (mmckeown@ucc.ie). **Title of email should be MATCH4.**

Closing date: 29th March 2024 at 5pm (local) Irish time. Interviews should be expected shortly after.