Two 3-year PhD Fellowships in Environmental Plant Sciences in the School of BEES, UCC

Duckweed as the driver of the circular economy

Two 3-year PhD studentships on the interface of environmental Sciences and Plant Biology are available in the School of Biological, Earth and Environmental Sciences at University College Cork. Both PhD opportunities are part of a multi-disciplinary project, funded by the Department of Agriculture, Food and the Marine (DAFM), entitled "Duckweed as a novel, sustainable source of protein for Ireland" ("Duck-Feed" for short). The project is led by UCC (Professor Marcel Jansen, BEES, with input from both the School of Process and Chemical Engineering and the School of Microbiology), as well as partners at Teagasc, TU Dublin and Devenish Ltd.

Duckweed is recognised as a key player in the circular economy, and hence innovative, sustainable approaches to food production and processing. Duckweed is highly suitable for growth on, and remediation of, nutrient-rich wastewater streams, cleaning such waters and creating protein-rich biomass in the process. Thus, duckweed can be used for wastewater valorisation. To develop duckweed as a sustainable protein source for Ireland, the project team have developed the integrated, multidisciplinary "Duck-Feed" project that focusses on all key bottlenecks of growth, processing, use and public acceptance, that need addressing to integrate this crop in Irish-farming. Key objectives of the Duck-Feed project are to develop small scale outdoor cultivation systems, develop Lemna growth on farm waste-streams, optimise protein extraction technology, assess feed quality, economic and environmental viability, and public acceptance of duckweed as a native, protein-rich feedstock.

Key tasks for the PhD candidate will be trialling of outdoor growth systems, development of wastewater management protocols, selection of improved duckweed strains and assessment of phytoremediation capacity. As this project has a strong, interdisciplinary focus, candidates will need to possess a broad background in the natural sciences.

Both PhD students will predominantly work with Prof Jansen and will be based in the School of BEES but will be expected to develop strong working relationships with project partners elsewhere in UCC and at the project partners. Thus, the ideal candidate is a confident and effective communicator.

The successful applicant will hold a relevant degree (at least 2.1 honours) with a specialization in plant biology and/or environmental sciences. Applications by graduates with a MSc degree are particularly welcomed. The student should be highly motivated, independent, fluent in English and have excellent technical skills. It is expected that the student works within the tight timetable set for the project. The student will be enrolled in the UCC postgraduate degree programme.

The value of the DAFM/UCC Fellowship is €24,000 per annum, which will cover UCC EU-fees (about €5,770 per annum), as well as a student stipend. There will also be a consumables and equipment budget associated with the work, as well as potential opportunities for funded travel associated with the project. Non-EU candidates are expected to cover the difference between EU and non-EU fees (https://www.ucc.ie/en/financeoffice/fees/schedules/#fees-schedules-2022-2023).

Candidates are expected to be available to start October 1st, 2022.

Closing date for applications is July 12, 2022. Applications should include a full CV, a cover letter describing the interest and background of the applicant relevant to the area of research and contact details of two referees. The successful applicant will be asked to proceed through the Postgraduate Applications Office at UCC for formal registration.

Applications can be emailed to Prof Jansen at the address below. Informal enquiries can be directed to Professor Marcel Jansen 021 4904558 (m.jansen@ucc.ie).

Prof Marcel Jansen,

School of Biological, Earth and Environmental Sciences, University College Cork.
University College Cork.
Cork.
Ireland