**Position Summary**

**Project Summary**

To date, no commercial product has been developed which tests standardization of environmental conditions within and between Controlled Environment Chambers (CECs) of the same manufacturer or between different manufacturers. Currently, each environmental parameter within CECs (e.g. temperature, humidity, light intensity) is monitored by the deployment of a single artificial sensor per CEC. Our ERC StG research1 (Porter et al., 2015) has demonstrated that whole networks of artificial sensors, costing thousands of euros per CEC, are required to ensure environmental homogeneity within and between CECs, which represents a prohibitive cost to research and industry. This Proof of Concept (PoC) grant will develop and commercialize the first plant-based sensor kit for standardization and calibration of CECs used in plant research, commercial horticulture and the international plant breeding sector globally (Syngenta, Monsanto, Bayer) bringing down the cost of testing environmental homogeneity within and between CECs by an order of magnitude.

Simply stated, plants are better sensors than any manufactured artificial sensors currently available on the market. The challenge and aim of this PoC is to quantify and calibrate the ‘biosensor’ capacity of plants and to develop an easy-to-use tool using plants as sensors for the standardization and calibration of CECs.

The primary purpose of the role is to develop the PlantSenseKit, advance research skills and competences, and contribute to the processes of publication in peer-reviewed academic publications and scholarly dissemination.

**In addition to the Principal Duties and Responsibilities listed below, the successful candidate will also carry out the following duties specific to this project:**

- Conduct experiments in Controlled Environment Chambers (CECs) that focus on developing, calibrating and completing a prototype of PlantSenseKit that is user-friendly
- Advance the protocol designed by ERC OXEVOL team into a CEC standardization prototype for all potential users
- Collaborate on the technological development of the PlantSenseKit protocol in conjunction with an industry partner
- Contribute to the development of market research that addresses the experimental design of the user protocol.
- Liaise with representatives from Industry, UCD and TCD
• Work closely with NovaUCD to establish an intellectual property position and strategy throughout the project
• Responsible for monthly reporting and monitoring of chamber environmental conditions and status of project
• Responsible for accurately communicating the progress of the project to PI and industry partners
• Attend weekly lab meetings

**Salary:** €35,488- €46,255 **per annum**
Appointment on the above range will be dependent on qualifications and experience

**Principal Duties and Responsibilities**

• Conduct a specified programme of research and scholarship under the supervision and direction of your Principal Investigator.
• Engage in appropriate training and professional development opportunities as required by your Principal Investigator, your School or Institute, or the University.
• Support your Principal Investigator and research group in the design and development of the research programme.
• Engage in the dissemination of the results of the research in which you are engaged as directed by and with the support of and under the supervision of your Principal Investigator.
• Engage in the wider research and scholarly activities of your research group, School and Institute.
• Take responsibility as requested for day-to-day advice and support of graduate research students associated with your research group.
• Mentor and assist, as appropriate and as directed, the research graduate students in your group, School and Institute.
• Carry out administrative and management work associated with your programme of research.

**Selection Criteria**
Selection criteria outline the qualifications, skills, knowledge and/or experience that the successful candidate would need to demonstrate for successful discharge of the responsibilities of the post. Applications will be assessed on the basis of how well candidates satisfy these criteria.

**Mandatory Prerequisites**

• PhD in Botany, Plant Science or Evolutionary Science
• Experience working with Controlled Environment Chambers (CECs)
• Excellent knowledge and experience in experimental plant science
• Demonstrated understanding of operational requirements for a successful research project and managing resources
• Knowledge and application of developing experimental protocols
• Ability to identify and fulfil the academic writing requirements for target publications
• Proven record of working with team members and PhD students to help build their research skill and knowledge and to support and guide their professional development
• Generates new ideas and links and builds upon existing ideas to generate unique concepts and solutions
• Demonstrated experience of a working laboratory environment
• Ability to troubleshoot
• Willingness to learn wide range of new skills

Desirable Prerequisites

• PhD project that involved the use of CECs in the field of Plant Science
• Experience in liaising with industry representatives
• Excellent knowledge of plant growth chambers
• Excellent knowledge of gas analysis systems
• Horticultural/Plant Sciences knowledge/background
• Electric/Electronic Engineering background
• Knowledge of IP processes and knows how to protect findings
• Demonstrated understanding of the value of academic and commercial information e.g. Non-disclosure agreements

Further Information for Candidates

The University:  http://www.tcd.ie/
The College/Management Unit:  http://www.naturalscience.tcd.ie/
The School/Programme Office/Unit:  http://www.naturalscience.tcd.ie/facilities/
Other (Please specify):  http://www.ucd.ie/plantpalaeo/mcelwain.html

Please send CV and Cover Letter to:
Name: Jennifer McElwain
Title: Professor
Email address: Jennifer.mcelwain@gmail.com
Email Subject: ERC Proof of Concept – Post Doctoral Applicant – Plant Science

Application Closing Date: 5:00 pm (IST) on October 6th, 2017

Please note that reallocation expenses will not be covered