Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Ecological forecasting of plant resistance to ash dieback and other pathogens

We invite applications for a 2-year postdoctoral researcher (with the possibility of extension for another 2 years) within the Plant Ecology Modelling group in the Discipline of Botany, School of Natural Sciences at Trinity College Dublin.

Project background and description

Outbreaks of plant diseases, such as the recent widespread effects of ash dieback in Ireland and across Europe, pose a major threat to both natural and managed habitats. With the inevitable advancement of climate change, both the risk of new pathogens and plant susceptibility are likely to increase. As species in general migrate northward, ecosystems in Ireland are likely to be exposed to new species of pathogens, to which local plants may not be adapted. This will be compounded by abiotic stressors such as drought, heat, and extreme rainfall, making plants more vulnerable to new infections. Therefore, it is critical that we have the tools needed to forecast such outbreaks and take short- and medium-term decisions about landscape management.

The E-PATH project aims to build an ecological forecasting tool based on plant eco-physiological models, with an aim to provide localised, short-term information on the probability and degree of infection and to what extent a tree can survive. The successful candidate will build upon an existing model (EDPest) and further develop and validate it to represent the climate, species, and management of Irish landscapes. The candidate will work closely with collaborators at Teagasc - Dr. Dheeraj Rathore and a PhD student also part of the project – who will gather novel observations in parallel with the modelling work, aiming for a close knit collaboration between the modelling and field scientists.

The candidate will join the Plant Ecology Modelling group, a vibrant and growing research team working on a variety of ecosystem modelling aspects, including phenology, nutrient cycling and plant adaptation to climate. They will have the opportunity to form international collaborations and attend multiple conferences throughout the duration of their project.

Candidate profile

The ideal candidate will:

- Hold (or be close to completing) a PhD in ecology, geosciences, environmental science, or a similar relevant subject
- Have experience in using and/or developing vegetation or land surface models

- Have previous experience working with plant pathogen or herbivore response or detail why they're interested in the topic
- Have programming experience (e.g. R, Python, Matlab, Fortran)
- Have at least one first author peer-reviewed publication (can be preprint)
- Possess good written and spoken English skills

What we offer

- 2-year position with the possibility of extension upon satisfactory performance for another 2 years (funding already secured)
- Salary €44,847 - 48,411 commensurate with experience and including annual increments (in accordance with the IUA scale)
- Pension and benefits in accordance with Irish university regulations

Application

Please send a CV and a 1-page personal statement detailing why you are interested in the project and names and contact details of two referees, no later than the 13th of January 17:00 GMT by email to Dr. Silvia Caldararu caldaras@tcd.ie. Online interviews will take place in the week of 20th of January. Late applications will be considered only if the position is not filled in the first round of interviews.

The personal statement should contain details of your research interests, career plans and how this project relates to these.

Project starting date March 2025 or as soon as possible thereafter.

We strive for a bias free recruitment process so we ask you to not send CVs that include a photo or information of a personal nature (e.g. age, marital status, nationality). Statements will be read before CVs. We encourage applications from underrepresented groups in STEM.

Please address all enquiries by email to Dr. Silvia Caldararu caldaras@tcd.ie

Links

Plant Ecology Modelling group: https://plantecomodelling.org/