

Post Doctoral Fellowship Programme Description

Post Title	Teagasc Post Doctoral Research Fellow Level 2 (PD2)
HR Reference	PD2/AT/0716
Research Area	Forest Pathology / Plant Pathology / Mycology
Eligibility	PhD in a relevant discipline and with a min. of 3 years and no more than 5 years' relevant experience.
Project Title	Horizon scanning, epidemiological modelling and investigation in state of the art Pest Risk Analysis for pest and pathogen threats to Ireland's Sitka spruce forests.
Project End Date	31/06/2020
Post Duration	The indicative duration of 17 months, but not exceeding the above project end date, subject to contract.
Location	Teagasc Forestry Development Department, Ashtown, Dublin 15 and DAFM Backweston Laboratory Complex, Celbridge, Co. Kildare.
Reports to	Dr. Helen Grogan
Training Rate	<p>Appointment will be at the minimum point of the Post Doctoral Level 2 (PD2) scale (€38,155).</p> <p>The current PD2 scale is as follows: PD2: €38,155 (min.); €39,279; €40,437 (max.)</p> <p>Increments will be awarded annually* subject to performance and completion of the prescribed training plan.</p> <p><i>Note: Exceptional circumstances may apply for candidates with current or previous service in the public sector. *Remuneration and the annual cycle for the payment of increments may be adjusted from time to time in line with Government policy.</i></p>
Basic Function of the post:	A senior post-doctoral researcher, with expertise in plant or forest pathology/mycology, is required to take a lead role in the Department of Agriculture, Food and the Marine (DAFM-funded project entitled 'Horizon scanning, epidemiological modelling and investigation in state of the art Pest Risk Analysis for pest and pathogen threats to Ireland's Sitka spruce forests'). The work will be done in collaboration with a post-doctoral researcher in entomology as well as forestry staff at Teagasc and UCD, climate change staff at Maynooth University and Plant Health Laboratory (PHL) staff at DAFM's Backweston Laboratory Campus. Key tasks will include: A literature review to 'horizon scan' for possible pathogen threats to Ireland's Sitka spruce plantations, developing and improving Pest Risk Analysis (PRA) to include climate change modelling and trait analysis of pathogens and to complete two full PRAs for the two most threatening pathogens and the most threatening pathways by which they enter Ireland.
Background:	<p>Sitka spruce is the most important forest tree species planted in Ireland as it makes up over 50% of the forest estate. Much of the Irish spruce forest is relatively homogenous regarding age and provenance (Queen Charlotte Islands/Washington). Protecting Ireland's most widely planted tree species is central to the sustainable development and expansion of plantation forestry in Ireland.</p>

Recently Irish larch and ash forests have suffered from devastating outbreaks of two new pathogens to Ireland: *Phytophthora ramorum* causing larch (and oak) sudden death and *Hymenoscyphus fraxineus* (anamorph *Chalara fraxininea*) causing ash dieback. Future pest threats to Irish forests are also worrying, and include oak processionary moth, horsechestnut leaf miner, pine wood nematode and Eucalyptus beetle.

This project aims to conduct a short duration intensive desk study followed by advanced analysis and modelling techniques to determine the risk posed to Sitka spruce forests in Ireland from non-native invasive pests and pathogens. Two post-doctoral posts are being recruited for the project who will work closely together on a number of tasks. This post, recruited by Teagasc's Forestry Development Department, is focussed on identifying existing and potential pathogens of Sitka spruce while a second post, recruited by the Department of Biology at Maynooth University, Co. Kildare, is focussed on identifying existing and potential Sitka Spruce pests. Both posts will include elements of climate change modelling and trait analysis of pests and pathogens to identify which species are most likely to "host jump". Both posts will include developing PRAs for the most threatening organisms.

The successful candidate for this senior post-doctoral post (PD2) will take a lead role in the overall project. They will be based at Teagasc's Ashtown Campus, Dublin, for administrative purposes but they will be hosted by the DAFM's PHL, which is located near Celbridge, Co. Kildare, and with whom they will work closely. They will also work closely with the entomologist post-doctoral scientist recruited by Maynooth University, as well as with the climate change staff in the University's Department of Geography, and the forestry staff at Teagasc and UCD.

Teagasc, DAFM and Maynooth University have collaborated on many projects of importance to plant health in the past and so there is a network of contacts already in place.

The Teagasc post-doctoral programme provides training and development opportunities for early career scientists that enhances their experience of learning and equips them with the necessary skills for the next stage of their chosen career in research.

This advanced research focused training role provides experienced post-doctoral researchers with the opportunity to build on their prior experience and is supported by a modular training programme, which will include modules of relevance to enhance their development of specific knowledge and research skills, professionalism and communication skills, leadership and management skills, and overall career development.

Modules will be conducted under the supervision and direction of Dr. Helen Grogan or other designated manager in conjunction with the Head of Department.

Duties & Responsibilities specific to this project:

- To conduct a literature review to 'horizon scan' for possible pathogen threats to Ireland's Sitka Spruce plantations.
- To compile a Sitka spruce pathogen-risk database that builds on existing databases worldwide. Data will be analysed using two different clustering methods (self-organizing maps [SOM] and hierarchical clustering [HC]) to identify the top most important pathogen risk species.
- To develop novel methodologies to improve Pest Risk Analysis (PRA) accuracy which includes climate change modelling and trait analysis of pathogens of Sitka spruce and related tree species to identify which species are most likely to "host jump".
- To complete full PRAs for the 2 most threatening pathogens and the most threatening pathway by which they enter Ireland.

Additional Duties & Responsibilities:

- To interpret research findings and prepare scientific and popular press publications.
- To disseminate research findings to a variety of audiences as appropriate.
- To assist Teagasc in meeting the commitments of the Quality Customer Service Charter and action plan.
- To comply with all relevant Teagasc policies and procedures.
- To actively participate in the Teagasc Post Doctoral Fellowship programme and review processes, and to undertake all Post Doctoral fellowship training and associated duties as agreed in the Training & Development Plan.
- To take up additional duties as may arise or as assigned by management.

Person Specification

This section outlines the qualifications, skills, knowledge and/or experience that the successful candidate would be required to demonstrate for successful discharge of the responsibilities of the post. Applications will be assessed on how well candidates satisfy these criteria.

Essential

- ❖ PhD in Mycology/plant pathology/forest pathology/crop protection.
- ❖ A minimum of 3 years and not more than 5 years' relevant research experience post PhD.
- ❖ Demonstrated research and technical expertise in Mycology/plant pathology/forest pathology.
- ❖ Track record of researcher dissemination including peer-reviewed publications.
- ❖ Excellent project management, analytical, report writing and data analysis skills.
- ❖ Proven record of collaboration with team members to help build research knowledge and skill and to guide professional development.
- ❖ Excellent communication skills (oral, written, presentation) with a demonstrated ability to enable effective knowledge and technology transfer.

Desirable

- Experience in forest pathology, forest protection, modelling, climate change, pest risk analysis.
- A well-developed network of contacts in forestry research.
- Experience in setting own research agenda.
- Evidence of teamwork and collaboration with diverse partners.

Further Information for Candidates

Candidates can access a Fellowship Programme Application form for this post on the Teagasc website at <https://www.teagasc.ie/about/opportunities/post-doctoral-opportunities/>. Teagasc do not accept Curriculum Vitae as an application for a position. In order to apply for a post the relevant application form must be completed in order to be considered.

Completed application forms should be TYPED and saved in PDF format and submitted by email to teagascjobs@clark.ie no later than 12 midnight on Tuesday 13th September 2016.

Teagasc is an equal opportunities employer. Canvassing will disqualify. The details contained above are subject to change without notice.