The Davies lab at the University of British Columbia is advertising two funded postdoctoral positions

A phylogenetic framework for the macroecology of plant disease

Applications are invited for a fully funded one-year postdoctoral position, starting September 2019 with possibility of extension, on the development of a phylogenetic framework for the macroecology of plant diseases that merges theory with phylogenetic, spatial and trait-based approaches.

Project Description

Emerging infectious diseases (EIDs) represent one of the single biggest threats to humans, wildlife, and domesticated plants and animals. Traditional approaches for modelling infectious disease dynamics have assumed a single-host single-pathogen framework, but many pathogens infect multiple host species, and hosts are infected by multiple pathogen species. This position aims to develop new theoretical and statistical models to examine multi-host multi-pathogen disease dynamics in plants, and validate them using large databases on the plant pests and pathogens of wild and agricultural species.

The successful candidate will be expected to work with a disperse team of collaborators, participate in working groups, assist in supervision of graduate students, and contribute to the lively research community at UBC.

Requirements

Key requirements include a strong conceptual and quantitative background in phylogenetic methods and/or spatial ecology, proficiency in programming (preferably in R), and an excellent understanding of community ecology and/or disease biology. Candidates with a proven track record in analyzing large datasets and statistical modelling will be given preference.

The changing intensity of plant pests and pathogens with climate warming

Applications are invited for a fully funded one-year postdoctoral position, starting September 2019 with possibility of extension, on modelling the changing intensity of plant pests and pathogens with climate warming using data from herbaria and new, field-

based sequencing platforms.

Project Description

Species are responding to a warming climate in multiple ways. Animals are migrating or reproducing sooner. Plants are shifting their phenology, leafing out and flowering earlier in the growing season, or moving their geographic distributions pole-wards or upwards in elevation. There has been increasing concern that such shifts might result in spatial or phenological asynchronies between tightly coupled species, for example, flowers and their insect pollinators. To date, asynchrony in antagonistic interactions, such as between hosts and pathogens, has received less attention; nonetheless, climate change is predicted to facilitate the emergence of pests and pathogens in new regions. This postdoctoral position will use the vast historical record housed in herbarium collections to document shifting pest and disease pressures through time, and track contemporary pathogen spread using new field-based sequencing tools, such as the Nanopore Minion sequencer, that can generate data in near real time.

The successful candidate will be expected to assist in the development of statistical and molecular methods, help in the supervision of graduate students, and contribute to the lively research community at UBC.

Requirements

Key requirements include an excellent understanding of community ecology and/or disease biology, a strong conceptual and quantitative background, proficiency in programming (preferably in R). Candidates with experience in analyzing next generation sequence data, and/or working with herbarium specimens will be given preference.

Location

The position will be in the Davies lab (https://phyloecology.wordpress.com/) within the Biodiversity Research Centre at the University of British Columbia (https://biodiversity.ubc.ca/), with strong ties to the Departments of Botany, and Forest and Conservation Sciences.

Application

Please send a current CV, a letter of interest and the name and emails of two references to Jonathan Davies, UBC (j.davies@ubc.ca). Informal enquires welcome. Review of applications *will begin 15 May* and continue until the position is filled.