

Three UK-based postdoctoral research associate positions on the metabolic basis of species invasions

Three postdoctoral research associate (PDRA) positions are available under a collaborative project between Imperial College London (IC) (two positions) and University of Exeter (UE) (one position). The three 3-year PDRA positions are funded by a UK National Environmental Research Council grant to study metabolic constraints on species invasions under different regimes of environmental temperature. The IC PDRA positions will be based in the Pawar lab (<http://www.imperial.ac.uk/people/s.pawar>) at Silwood Park (<http://www3.imperial.ac.uk/silwoodparkcampus>) and the UE position will be based in the Yvon-Durocher Lab (<http://www.exeter.ac.uk/esi/people/yvon-durocher/> and http://www.researchgate.net/profile/Gabriel_Yvon-Durocher) at the Penryn Campus in Cornwall (<http://www.exeter.ac.uk/cornwall/index.html>). Both Silwood Park and Penryn Campuses offer a vibrant academic environment in beautiful natural settings.

Invasive species are currently considered second only to habitat loss as a cause of rapid and undesirable changes in the functioning of ecosystems worldwide. However, we currently lack adequate frameworks for predicting which species will succeed in invading new habitats as the planet warms. This multi-institutional, interdisciplinary project will use a novel combination of ecoinformatics (construction and analysis of a global metabolic traits database), mathematical theory, and laboratory experiments with phytoplankton to build a general mechanistic, trait-based predictive framework for invasion success. The three positions are:

(1) /*PDRA in computational biology and ecoinformatics*/: The primary responsibility for this position will be the construction, management and mining of a new global database on the thermal responses of metabolic traits relevant to species invasions. For this position, we invite applications from candidates from any background having computational skills suitable for big data science, bioinformatics and statistical likelihood-based data mining. The core computational tools will all be open-source, possibly SQL in combination with programming in Python (or a similar language) and R. For more details and application procedure, please see https://www4.ad.ic.ac.uk/OA_HTML/OA.jsp?page=/oracle/apps/irc/candidateSelfService/webui/VisVacDispPG&O_AHP=IRC_EXT_SITE_VISITOR_APPL&OASF=IRC_VIS_VAC_DISPLAY&akRegionApplicationId=821&transactionid=1205965559&retainAM=Y&addBreadCrumb=RP&p_svid=44701&p_spid=1690210&oapc=15&oas=GjavE_6MsNQDUedRaNuKBQ, or contact Samraat Pawar by email (s.pawar@imperial.ac.uk) for informal enquiries.

(2) /*PDRA in mathematical modelling*/: The primary responsibility for this position will be the development and analyses of mathematical models of species invasions under fixed and fluctuating temperatures, and fitting models to experimental invasions data. For this position, we invite applications from candidates from any background with mathematical skills suitable for modelling the population dynamics of species interactions who are also comfortable with developing efficient numerical simulations/analyses in Python (or equivalent languages). For more details and application procedure, please see https://www4.ad.ic.ac.uk/OA_HTML/OA.jsp?page=/oracle/apps/irc/candidateSelfService/webui/VisVacDispPG&O_AHP=IRC_EXT_SITE_VISITOR_APPL&OASF=IRC_VIS_VAC_DISPLAY&akRegionApplicationId=821&transactionid=1205965559&retainAM=Y&addBreadCrumb=RP&p_svid=44703&p_spid=1690212&oapc=12&oas=ux2wD5FM9b3GAIuO2Uk0UA, or contact Samraat Pawar by email (s.pawar@imperial.ac.uk) for informal enquiries.

(3) /*PDRA in experimental population biology*/: The primary responsibility for this position will be the development and implementation of laboratory experiments with a wide range of phytoplankton taxa. The experiments will entail characterization of phytoplankton physiology using Oxygen electrodes and fast repetition rate fluorometry as well as running multiple competition experiments under different regimes of simulated global change. The successful candidate will work closely with the theoretical and ecoinformatics post-docs to develop a general trait-based predictive framework for species invasions. For this position, we invite applications from candidates with who are competent both in the laboratory and at handling and analysing large, complex datasets. Prior experience with phytoplankton culture, physiology and programming in R are preferable. For more details and application procedure, please search for "P47703" under Keywords at <https://jobs.exeter.ac.uk>, or contact Gabriel Yvon-Durocher (g.yvon-durocher@exeter.ac.uk) for informal enquiries.

The integrative nature of this project means that the PDRAs will get a unique opportunity to work in a collaborative environment. There will also be ample opportunities to visit and interact with the laboratories of Co-Investigator Dr. Daniel Reuman at U Kansas and Kansas Biological Survey, and a number of project partners and collaborators in Australia, China, UK, and US. An interview will be scheduled for all short-listed candidates in early December.

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