Two-year post-doc research positions in Yvonne Buckley’s population ecology research group, Trinity College Dublin.

Three post-doctoral positions in quantitative population ecology, population/landscape genetics, and experimental population ecology are available in Professor Yvonne Buckley’s ecology research group at Trinity College Dublin. The post-docs are two year positions available full- or part-time. You will be part of a team funded by a Science Foundation Ireland grant to develop general predictions of the ecological and evolutionary responses of plant populations to the environment (see abstract below).

Yvonne Buckley is developing a new research group based in the School of Natural Sciences in Trinity College Dublin.
http://www.tcd.ie/Zoology/research/research/buckley/

Yvonne Buckley is the coordinator of the PLANTPOPNET global observational network for *Plantago lanceolata* population biology. Data from PLANTPOPNET, NUTNET and COMPADRE will be used together with data generated by the post-docs from observational, laboratory and experimental settings to test hypotheses and explore research questions in comparative population ecology.

Candidates will enjoy working in a collaborative team but must be highly self-motivated and work well independently. Candidates will be expected to undertake high quality research of international significance and produce peer-reviewed publications in high impact international journals. Candidates may be expected to mentor PhD students and undergraduate students undertaking projects closely related to their work. Candidates are expected (and will be supported) to present their results at an international conference during the course of their postdoc. Candidates will be expected to take part in collaborative workshops either in Ireland or overseas to work with collaborators on multi-authored papers.

The closing date for all applications is 30/07/15 with the position to start on or after 01/09/2015.

Specific requirements for each position are given below, followed by details of the application process.

**Post doc 1. Two-year postdoc in quantitative population ecology:**
You will develop and test models using data from PLANTPOPNET, COMPADRE and NUTNET to determine the drivers of variation in population dynamics and life history strategy for hundreds of plant species worldwide. You will be co-supervised by Dr. Rob Salguero-Gomez (currently at the University of Queensland, joining the University of Sheffield in 2016, coordinator of COMPADRE Plant Matrix Database).
Essential criteria:
1. PhD in a relevant area in ecology, population biology, plant sciences, zoology, phylogenetics, bioinformatics maths and/or statistics.
2. Proven ability to manipulate and analyse large datasets

Desirable criteria:
1. High quality publications in international peer reviewed journals
2. Experience with developing and using population models
3. Experience in demography, population biology or life history theory
4. Use of R for data manipulation and analysis
5. Experience with comparative analysis using modern phylogenetic methods
6. Experience working in multi-author collaborations/workshops, both as a leader and as a co-author
7. Experience using High Performance Computing resources
8. Experience with GIS
9. Experience with database design and/or use
10. Ability to integrate knowledge from various biological disciplines (e.g. biogeography, ecology, demography)

Post-doc 2. Two-year postdoc in population/landscape genetics:
You will work with data from PLANTPOPNET, a coordinated distributed observational network for population ecology of Plantago lanceolata. You will be co-supervised by Prof. Trevor Hodkinson (Botany, School of Natural Sciences, Trinity College Dublin). You will develop microsatellite markers for P. lanceolata, design a sampling scheme, collect and analyse samples and analyse the resulting spatial and genetic data to determine how population genetics of Plantago lanceolata varies across its native and non-native ranges worldwide. There is scope to design landscape level sampling strategies in order to model population genetics at a finer scale. There is scope to use SNPs in addition to, or as an alternative to microsatellite markers. Additional data from PLANTPOPNET on trait distributions, population structure, density, management and environmental covariates will be available for testing hypotheses for how gene flow varies with the environment.

Essential criteria:
1. PhD in a relevant area in evolution, ecology, population biology, genetics, plant sciences or zoology.
2. Experience in laboratory and analytical population genetics.

Desirable criteria:
1. High quality publications in international peer reviewed journals
2. Experience with developing and using population models
4. Use of R for data manipulation and analysis
5. Experience with comparative analysis using modern phylogenetic and population genetic methods
6. Experience with population genetics and/or landscape genetics software
7. Experience working in multi-author collaborations/workshops
8. Experience with GIS
9. Experience with database design and/or use

**Post-doc 3. Two-year postdoc in experimental population ecology:**
You will work with the model species *Plantago lanceolata* together with data from PLANTPOPNET, COMPADRE and NUTNET to determine how source and recipient environments affect trait expression and demography of *Plantago lanceolata*. You will design and set up a common garden experiment in Dublin, Ireland and/or Stockholm, Sweden. You may choose to be based primarily in Stockholm or in Dublin and will be co-supervised by Prof. Johan Ehrlén at the University of Stockholm.

**Essential criteria:**
1. PhD in a relevant area in ecology, population biology, plant sciences, zoology, maths or statistics.
2. Experience in experimental ecology

**Desirable criteria:**
1. High quality publications in international peer reviewed journals
2. Experience with developing and using population models
3. Experience in demography, population biology or life history theory
4. Use of R for data manipulation and analysis
5. Experience with comparative analysis using modern phylogenetic methods
6. Experience working in multi-author collaborations/workshops
7. Experience designing and running large field experiments
8. Experience in analysis of plant traits
9. Experience with GIS and use of environmental data

**Qualifications:**
For all positions the candidate’s PhD must have been attained by 01/09/2015.

**Salary range:**
Post-doctoral salary is based on the Irish Universities Association researcher salary scales for entry level postdoctoral researchers: The gross salary is €37,750 (+ pension contributions). Applications for part-time positions will be considered (*pro-rata* salary).

**Facilities**
The postdocs will be based in the Zoology Building, Trinity College Dublin and use resources in the Botany and Zoology buildings and with collaborators/co-supervisors. The post-doctoral researchers will have access to a newly renovated terrestrial ecology lab and a population genetics lab.

**Application process**
Send an email to buckley@tcd.ie with an attached cv, the names of two referees, a full publication list, and cover letter addressing all of the essential criteria and giving evidence for the desirable criteria which you meet. Use one paragraph of the cover letter to outline your research ambitions through the post-doc. You
Plant populations are essential for human survival and wellbeing and a critical component of biodiversity. In order to manage environmental disruptions, and adapt to environmental change, we need to develop general predictions of the ecological and evolutionary responses of plant populations to the environment. We will apply our expertise across population biology, invasion biology and quantitative ecology to provide a fundamental and integrated understanding of how traits and environment jointly determine life history strategy and population performance, across and within species. POPSTAR-SFI will produce a new synthesis of spatially extensive population ecology using the largest number of species and, within a single species, at the most spatially extensive scale ever undertaken. We will develop predictive models of environmental drivers of demography, which together with expertise in environmental decision theory can be used to inform management solutions for food security and biodiversity conservation worldwide. POPSTAR-SFI will enable experimental validation of the empirical patterns observed on the affect of the environment and traits on plant life history strategy and population performance. The theory, data synthesis and tools developed in POPSTAR-SFI will significantly advance spatial population ecology and enable spatially explicit predictions of the effects of global change on plant populations.