PhD Opportunity: Evolutionary Ecology of Icelandic Arctic Charr

Hólar University College, Iceland (Dr. Camille Leblanc), and University of Guelph, Canada (Prof. Moira Ferguson), seek a Ph.D. student to study *Microevolutionary processes in small populations of Arctic charr (Salvelinus alpinus)*.

Numerous ecological and evolutionary processes contribute to the generation of biodiversity, and the complexity of their interactions has presented a challenge to our understanding of nature. Our knowledge of the roles of development, natural selection, genetic drift, and gene flow in shaping biodiversity is complicated by the spatial and temporal variability inherent in natural systems. A powerful approach to better understand such processes involves monitoring wild populations over generations and obtaining data including pedigrees, phenotype, and fitness, so that we can directly infer evolutionary parameters, particularly those describing selection and genetic variation. We are seeking a talented PhD student to apply such an approach to wild populations of Icelandic Arctic charr, in order to further our understanding of the complex interplay among genes, phenotypes, and ecology, in natural environments.

The successful PhD student will test important microevolutionary theories with individual-based phenotypic records, molecular genetic (SNP) data, and ecological data from 20 populations of Arctic charr residing in a spatially replicated system of lava caves in the Myvatn area of northern Iceland. The monitoring of these populations began in 2012 and will now continue until 2018, providing an impressive long-term dataset for novel insights. Advanced analytical techniques will be used to understand spatial and temporal patterns of genetic variation, natural selection, and ecological covariates. The student will be based at the University of Guelph with Prof. Moira Ferguson but will spend considerable time at Hólar University College with Dr. Camille Leblanc (including annual fieldwork). Our ideal candidate will have interests in evolution, ecology, and genetics, and will have strong quantitative skills - necessary for the advanced analytical techniques used in this field. The student will be able to work independently and as part of a larger team, both in the laboratory and in the field. An MSc degree is preferred and the working language is English.

The project is a long term collaboration between the University of Guelph, Canada (Prof. Moira Ferguson), Hólar University College (Prof. Bjarni K. Kristjánsson, Prof. Skúli Skúlason and Dr. Camille Leblanc), the University of Iceland (Prof. Sigurður S. Snorrason, and Prof. Arni Einarsson), EAWAG, Switzerland (Dr. Katja Räsänen), and the University of St Andrews (Dr. Michael Morrissey). The project is funded by The Icelandic Science Foundation – Rannís. The position will be filled as soon as a good candidate is found (target date 1. June 2016).

Applicants should send an application letter with a max. 1 page statement of research interests and relevant experience, a curriculum vitae with a list of publications (if any), copies of academic qualifications including copies of unofficial transcripts and the names and e-mail addresses of three referees, as a single pdf file to Dr. Camille Leblanc ([camille@holar.is](mailto:camille@holar.is)) before April 30th 2016.

For further information contact Dr. Camille Leblanc, Associate Professor at Hólar University College, Iceland.

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