Ph.D. Scholarship: Population genomics of parallel evolution in Icelandic Arctic charr * What are the molecular underpinnings of parallel evolution? Do the same pathways, genes or even alleles contribute to divergence in multiple isolated populations within a species? These and related questions will be addressed by a team of researchers, and a capable Ph.D. student responding to this advertisement. The Ph.D. project utilizes the parallel evolution of a small benthic variety of Arctic charr /(Salvelinus alpinu/s) in Iceland and is designed to investigate the genetics of this recent, rapid and repeated diversification. Project outline Many key questions of evolutionary genetics can now be investigated in detail due to theoretical advances and high throughput molecular techniques. The project is built on extensive ecological work on Arctic charr, a cold adapted salmonid that invaded Icelandic freshwaters after the last ice age (about 12,000 years ago). In multiple habitats, especially spring fed streams and lakes, charr have diversified into limnetic and benthic forms, and in some cases they coexist in sympatry. *The principal objective of the research is to identify key genes and pathways that associate with ecological specialization (e.g. morphology, life history characteristics) in Arctic charr.*The Ph.D. projectďž˝ďž˝s aims are to: i) Identify SNPs that associate with dwarfism and/or morphotype and assess if and how variation at these loci correlates with ecological specializations across multiple populations. ii) Test whether genes that associate repeatedly with ecological specializations are under positive selection or if they have experienced relaxation of purifying selection. Ideal candidate and requirements We are seeking a student with dedication, drive and good theoretical background in population genetics and evolution and an interest in the genetics of divergence. The work involves planning and executing sampling in the field, acquisition and analysis of high-throughput sequencing data and numerical analyses. The position will be at the University of Iceland and the work will take place there.Experts at the University of Guelph, Canada, the University of Aarhus, Denmark, and the Hďž˝ďž˝lar University College, Iceland, will also participate in the project. Qualifications The applicant must have completed a M.Sc. degree in Biology or related fields from a University approved by the University of Iceland's Graduate School. Those with an advanced degree including at least a 60 ECTS credits thesis project will be given precedence. Terms of employment The PhD study should be completed within four years of full time study. The PhD-student may be involved in teaching, for two semesters maximum. Application Applicants should send a letter of intent (maximum two pages) explaining your interest in working on this project, why they want to pursue a Ph.D., what they hope to gain and learn during their PhD studies and what makes them suitable for this project. They should also send a CV, transcripts of university diplomas, courses taken at bachelor and masters level, degree project thesis and names and contact information of two persons that could provide letters of references. Applications should be sent **before March 15th, 2015**
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<mailto:
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>. University of Iceland The student will join the Arctic charr group at the Institute of Life and Environmental Sciences, under the supervision of Sigurdur S. Snorrason, Arnar Palsson and Zophonias O. Jonsson. The Arctic charr group consists of several Ph.D. students and senior personnel, and has collaborators in Iceland, Denmark and Canada. The combined expertise covers population ecology and genetics, molecular biology and bioinformatics. At

the institute we have well equipped molecular biology labs, and instruments and computer pipelines for high throughput sequencing, are accessible there or at collaborating centers. The University of Iceland strives to work against workplace discrimination and to offer equal opportunities to everyone. For further information contact: Sigurdur S. Snorrason (
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http://luvs.hi.is/en/arctic-charr-development-and-genomics
Best regards, Arnar