We announce the availability of a NERC Doctoral Training Partnership opportunity (PhD studentship) held jointly between the British Antarctic Survey and Bristol University (through the GW4+ scheme http://www.bristol.ac.uk/gw4plusdtp/programme/), to commence in autumn 2015. Students are eligible for full funding if they are a UK citizen or EU national who has been resident in the UK for three years at the time the studentship commences. For further eligibility information see the following link:
http://www.rcuk.ac.uk/RCUK-prod/assets/documents/documents/TermsConditionsTrainingGrants.pdf

Resolving the evolutionary history of a Southern Ocean "hotspot"

family: the philobryid bivalves

The Southern Ocean (SO) is a unique and isolated marine habitat, with over-deepened continental shelves, oceanography strongly influenced by the circum-Antarctic current and a low-temperature, stenothermal environment hosting a vast number of endemic and unusual species. The recent Census of Antarctic Marine increased the knowledge on known species and their biogeographic distributions but for most taxa, Southern Ocean diversity is still greatly underestimated. The Philobryidae (Bivalvia: Arcoida) are with 13 species one of the most speciose marine bivalve families in the SO, cover a depth range from the intertidal to the abyssal zone and have their global diversity hotspot in the SO. Previous genetic work on this family has been extremely limited. Despite this diversity, the genetic relationships and shell morphology of this family are poorly known, possibly due to their small size (<1.5cm). This project will assess the evolutionary history of the Southern Ocean Philobryidae and how past climate change and continental drift has influenced their species diversification. Preliminary molecular work has identified a number of cryptic species within nominal species of the genera *Adacnarca* and *Philobrya* from different locations and depth in the Southern Ocean, suggesting that even described species require investigation in terms of species limits, using genetics and morphology. The British Antarctic Survey holds extensive collections of Southern Ocean philobryids, including representatives of all described Southern Ocean species. The student will link genetic and material property tools to (i) determine the phylogenetic relationships within Southern Hemisphere Phylobryidae, particularly focusing on Antarctic taxa, using multiple mitochondrial and nuclear loci and placing this into broader context within the superfamily Arcoidea, (ii) measure the patterns of divergence and radiation of Philobryidae within the Southern Ocean, (iii) examine morphological and material property variation between species, and (iv) conduct population genetic analysis of population history for selected philobryid species. This studentship will include a genetic laboratory component, sequencing multiple nuclear and mitochondrial genetic loci to investigate phylogenetic relationships, and conducting ddRAD-seq and subsequent genomic analysis to investigate population structuring within selected taxa. They will also perform morphometric analysis, and conduct high resolution chemical and structural mapping using Electron Microprobe Analysis, Atomic force microscopy, and Electron Backscatter Diffraction, to characterise the shells. The analytical skills developed in this studentship are highly transferable to a wide range of jobs. The student will get a solid overview of marine ecology, genetics, bioinformatics, in-situ chemical and structural analysis. The student will be part of the vibrant Palaeobiology group at Bristol and the world leading Research Team at BAS. Applicants should possess a degree (II.1 minimum)/higher degree in a relevant subject. Experience of invertebrate biology, appropriate

molecular and data analysis techniques and polar marine ecosystems are advantageous.
The studentship is expected to last 3.5 years from October 2015, subject to NERC funding. To apply for this studentship, please send an expression of interest, CV and names and contact details for two referees to
jennifer.jackson@bas.ac.uk
by 3rd January 2015
. Primary supervisors are Dr Katrin Linse of the British Antarctic Survey and Dr Daniela Schmidt of the University of Bristol, with Dr Jennifer Jackson of the British Antarctic Survey co-supervising. For more about the GW4+ program, see
http://www.bristol.ac.uk/gw4plusdtp/programme/

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