

KESS Scholarship

Aberystwyth University are seeking to recruit a 3-year PhD student to work on a project entitled: **Resequencing and genetic profiling of native Welsh sheep breeds to lower greenhouse gas emissions.**

The sheep genome assembly has been recently completed and released to public. As a part of the International Sheep Genome Sequencing and Analysis Initiative several million sheep single nucleotide polymorphisms will be detected in sheep breeds from Europe, Israel, USA, Australia, and New Zealand by shallow and low-cost resequencing. This will lead to an effective genetic profiling and detection of the mutations affecting many traits of economical and environmental importance in the sheep industry.

During this Ph.D. programme the student will have a unique opportunity to develop a basis and to start dissecting the underlying genetics of green house gas (GHG) emissions and other traits from the Welsh sheep breeds. During this Ph.D. project the student will perform resequencing of well phenotyped sheep individuals different in the GHG emission levels and other traits of interest from typical Welsh breeds using Illumina HiSeq platform. Sequences from all individuals will be pulled together to detect single nucleotide polymorphisms (SNPs) using bioinformatics pipelines. The student will perform initial GWAS studies within sequenced individuals to identify genomic intervals affecting GHG amount emitted by Welsh sheep breeds. To achieve this goal the student will be involved in the microbial profiling of sheep individuals utilizing IBERS' 45 titanium FLX sequencer and will be focusing on sequencing of 16S rDNA and related genes to determine genotypic distribution within the host bacterial and archeal populations. The student will also focus on the genetic differences between Welsh and other sheep breeds to detect variations in the sheep genome that could be connected to adaptations to unique environmental conditions, e.g. living in highland areas.

As the basic science output of this project, the work is expected to provide insights into Welsh sheep genetics and produce high-quality publications related to adaptive genetics and history of Welsh native sheep breeds.

The prospective applicant should have a minimum of a 1st or good 2:1 in a relevant degree, and be available to take up the studentship by October 1st 2011. The project is part-funded by the European Social Fund (ESF) through the European Union's Convergence programme administered by the Welsh Government. KESS PhD scholarships are collaborative awards with external partners and in this case the collaborative support comes from Hybu Cig Cymru – Meat Promotion Wales. The successful applicant will also spend with the industrial partner who is based in Aberystwyth.

To apply, please submit the following to the Postgraduate Admissions Office (address below) by 31 August 2011:

1. A completed Research Programme Application Form, two references. Application and reference forms may be downloaded from <http://www.aber.ac.uk/en/postgrad/howtoapply/>.
2. A completed KESS application form (put the reference number AU30013 in the top right hand box of the application form) and an up-to-date CV. KESS application forms are available to download at the link below.

www.aber.ac.uk/en/ccs/staff-students/funding/kess/

3. A PhD proposal of up to 1,000 words where you expand on your experience and interests and describe why you are a good candidate for this research studentship. Please refer to the Project Description.

Value of Award: A stipend of £13,590 (rising in accordance with inflation for the remaining two years). Each scholarship has an additional budget for travel, equipment/consumables and training to support your research. KESS PhD Scholarship holders do not pay fees.

Length: Full-time for 3 years. (Theses must be submitted 6 months after the funded three year study period.)

Training: The achievement of a Postgraduate Skills Development Award (PSDA) is compulsory for each KESS scholar (The PSDA is based on a 60 credit award, which is an additional award to the PhD).

Eligibility: To be eligible to apply for a KESS award, you must be resident, upon application, in the Convergence Area of Wales and you must be able to take paid employment in the Convergence area on completion of the scholarship.

The Convergence Area means the following counties of Wales:

Isle of Anglesey
Gwynedd
Conwy
Denbighshire
Ceredigion
Carmarthenshire
Pembrokeshire
Swansea
Neath Port Talbot
Bridgend
Rhondda Cynon Taff
Caerphilly
Torfaen

For further student eligibility criteria related to the individual projects, please view the details of the individual project above.

Informal enquiries should be made to Denis Larkin at del2@aber.ac.uk or 01970 620805.

Address for applications:

Postgraduate Admissions Office
Recruitment & Admissions
Student Welcome Centre
Aberystwyth University
Aberystwyth
SY23 3FB

Quote Reference AU30013

Closing date for applications 31 August 2011