

PROJECT DESCRIPTION – Master’s Thesis at the Center for Quantitative genetics and Genomic (<https://qgg.au.dk/>)

Project title	The ancient alleles in Nordic Holstein cattle
Main subject area	Animal Genomics
Supervisor and Position E-mail	Zexi Cai, Researcher
Co-Supervisor(s), Position(s) E-mail	Goutam Sahana, Senior researcher
Project start	To be decided in agreement with the supervisor.
Physical location of project and students work	Center for Quantitative Genetics and Genomics, AU Foulum, DK-8830 Tjele
<i>Project description</i>	
Project goal and background	The retained or swipec of the ancient alleles in modern herds could give us information about the breeding and evolution. Nowadays, we can retrieve publicly available dataset of whole genome sequencing dataset for several <i>bos</i> species, which give us the opportunity to define the ancient alleles. This result could filling some gaps left by previous reported population genetics study of cattle.
Specific research topic(s)	<ol style="list-style-type: none"> 1. Design the suitable pipeline for variants calling 2. Defining the ancient alleles. 3. Population genetics
Methods	Usage of publicly available dataset, process of re-sequencing data, variants calling, ancient alleles analysis
Additional information	30-45-60 ECTS thesis as appropriate. The MSc student is invited to co-author a scientific publication.