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DEGREE: *Philosophiae Doctor*
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DEPARTMENT: Department of Biosciences
AREA OF EXPERTISE: Human population genetics
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DISSERTATION TITLE: *Human origins and migrations in Norway inferred from ancient and modern DNA analysis.*

A new Ph.D. project on human genetics, University of Oslo, shows that human Iron Age population of Norway was similar but not identical to extant Norwegians. Findings suggest that females were important agents in Viking expansions and that Viking Age society was stratified, diverse and multi-ethnic. The project was carried out by Maja Krzewińska, a Ph.D. candidate who is defending her dissertation on 22nd January 2014.

Previous research into historical human genetics in the North Atlantic region indicated close maternal affiliations between ancient population of Iceland and modern Scandinavians. Through the first analyses of genetic data from ancient inhabitants of Norway it has now finally been possible to compare the two ancient populations confirming their close maternal affinities. The findings suggest that the Iron Age women were involved in Viking migration and colonisation processes, previously chiefly attributed to males. The results point to the importance of ancient DNA analyses in relation to human migration studies.

The analyses of modern mitochondrial DNA and Y chromosome from 515 individuals from Bergen, Førde, Haugesund and Trondheim, revealed that geographically complex regions such as Norway, could harbour regionally structured human genetic variation, which could reflect both geographical isolation and historical events, such as Hanseatic trade and Iron Age migration. The Ph.D. project also shows that Iron Age and present day inhabitants of Norway were closely related but not identical as exposed by identification of extinct lineages and lineages characteristic of other than Norse ethnic groups. In addition, through collaboration with Elise Naumann and combination of different methods, namely ancient DNA and isotope analyses, the study revealed multiple burials from Norway Viking Age could house representatives of different social strata suggestive of slaves being buried with their masters. The Ph.D. project is the first survey of on ancient mitochondrial DNA data from Norway. Krzewińska carried out her studies in the period 2008-2013 on over 500 randomly selected modern Norwegians, and 80 Iron Age skeletal remains from the Schreiner Collection, University of Oslo.