Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Animal Genomics
Institute of Agricultural Science

ETH Zurich
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The **Animal Genomics group** within the Institute of Agricultural Sciences (http://www.ias.ethz.ch) of the Department of Environmental Systems Science (https://www.usys.ethz.ch) at ETH Zurich invites applications for two PhD positions in livestock genomics.

2 PhD positions – Exploiting big genomic data to identify selection targets in livestock populations

Hundreds of thousands of animals have been genotyped in order to implement the genome-based evaluation of livestock populations. The combination of large-scale genotype and phenotype data provides high power to detect genomic regions that control phenotypic variation. Having a set of well-characterized sequence variants associated with economically important phenotypes will allow for more precise breeding decisions. However, the number of sequence variants that are known to underpin phenotypic variation is still very small. The present project aims to identify and characterize trait-associated genomic regions in Swiss livestock populations at nucleotide resolution. The successful applicants will collect and analyze whole-genome sequence data from a large number of animals of diverse cattle and pig breeds. The sequence data will be used to compile reference panels that enable imputing sequence variant genotypes for hundreds of thousands of genotyped animals in silico. Large-scale association studies with imputed sequence variant genotypes will be performed to pinpoint causal variants for economically important phenotypes. Strategies will be developed to utilize causal sequence variants in breeding programs.

We are looking for highly-motivated PhD students with a strong interest in animal breeding and genetics, statistical genomics and/or computational biology to be part of a young and dynamic team that enjoys working with big genomic data. Applicants should hold a MSc degree in agricultural science, animal science, genetics, computational biology, bioinformatics, veterinary science or related disciplines. Affinity for animal genetics, statistics, bioinformatics and computational biology is required. The writing of scientific papers and participation in international conferences requires good knowledge of English.

We offer working in an exciting project carried out in a newly established group at ETH Zurich equipped with excellent computational and lab facilities. Supervision will be close, but allow in-

dependent work. Scientific writing and active participation in international scientific conferences is very much supported. The duration of the position is three years and the position is able to commence as soon as possible.

For further information regarding the advertised position or on the doctorate study at ETH Zurich please contact Prof. Hubert Pausch at hubert.pausch@usys.ethz.ch (no applications).

We look forward to receiving your online application including a cover letter that demonstrates your motivation and suitability for the position, a curriculum vitae with complete academic record, copies of Bachelor and Master degrees, and name and contact information of two references.

Please submit your application online (https://apply.refline.ch/845721/5382/pub/1/index.html) with attention to: ETH Zurich, Mr. Olivier Meyrat, Human Resources, CH-8092 Zurich. The selection process starts now and will be continued until a suitable candidate has been found. Applications via e-mail or postal services will not be considered.