NC STATE UNIVERSITY

Comparative Medicine Institute

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Title: Genomic improvement of complex traits

Research emphasis:

Dr. Maltecca groups research is focused on the genetic improvement of economically relevant traits in livestock. The main interests of the group are in the area of genomic prediction and genome wide association for functional traits in dairy and swine. Additional research is focused on the impact of genomic selection on long term variation and fitness of livestock. We make use of a combination of simulated data, large cross-sectional field data, as well as designed experiments.

Application :

- Genomic predictions
- Complex traits modeling
- Genome Simulation
- Next gen seq.

Collaboration potential:

- Prediction of disease and complex traits
- Pigs as model for pharmacogenomics
- Genomic variation, inbreeding and fitness prediction
- GWAS from cross-sectional studies, complex designs

Selected publications: (limit 4)

JT Howard, M Haile-Mariam, JE Pryce, C Maltecca Investigation of regions impacting inbreeding depression and their association with the additive genetic effect for United States and Australia Jersey dairy cattle BMC genomics 16 (1), 813 201

JT Howard, AT O'Nan, C Maltecca, RE Baynes, MS Ashwell Differential Gene Expression across Breed and Sex in Commercial Pigs Administered Fenbendazole and Flunixin Meglumine PloS one 10 (9), e0137830 2015

KLP Gaddis, F Tiezzi, JB Cole, JS Clay, C Maltecca Genomic prediction of disease occurrence using producer-recorded health data: a comparison of methods Genetics Selection Evolution 47 (1), 4 2015

F Tiezzi, C Maltecca Accounting for trait architecture in genomic predictions of US Holstein cattle using a weighted realized relationship matrix. Genetics Selection Evolution 47 (1), 24 2015