Binary traits (Binomial model) Quantitative traits (Gaussian model) Hair color (red) Mean platelet volume 0.6 -Spearman's  $\rho = 0.21$ Spearman's  $\rho = 0.61$ (p-value: 0.00096) (p-value: 2.2e-59) 0.3  $\mathbb{R}^2$ Incremental Nagelkerke's  $\mathbb{R}^2$ Incremental Standing 0.2 Direct billirubin Hair color (blonde) Lipoprotein A Apolipoprotein B Hair color (dark brown) Porphyrin and • Heel bone mineral dens 0.2 bilirubin metabolism disorders (TTE) Celiac disease Other coagulation 0.1 defects (TTE) Intestinal malabsorption (TTE **Iritis** Ankylosing Total bilirubin Type 1 diabetes spondylitis EBNA-1 antigen for Epstein-Barr Virus 0.0 0.0 10 100 1000 10000 Number of genetic variants 10 100 1000 10000 Number of genetic variants Cancer Lifestyle and environment Bone-densitometry of heel Disease outcome Others Anthropometry Trait category Family history Psychosocial factors Trait category Biomarkers Lifestyle and environment Others Health and medical history **Blood** assays