

Genome-Wide Association Studies: Why, How and then What?

4 days (27.03.2023 – 30.03.2023)

Zoom: <https://uio.zoom.us/j/64487262227?pwd=UGFZSXRpc1ZHKzZiVnhDYXQ5QURnQT09>

Day 1 [27.03]. Genome-wide association studies background and clinical implications.

09:30 – 09:45 General introduction and overview of projects in NORMENT. [Ole Andreassen]
09:45 – 10:45 Genes, genomes and genetic variation. [Timothy Hughes]
10:45 – 10:50 Break.
10:50 – 12:00 Preparing for workshops. [Alexey Shadrin]
12:00 – 12:30 Lunch Break.
12:30 – 13:30 GWAS. Clinical implications. [Olav Smeland]

Day 2 [28.03]. Pre-GWAS: quality control and imputation.

09:30 – 10:15 Pre-imputation QC, imputation and post-imputation QC + *workshop* (part 1). [Bayram Cevdet Akdeniz]
10:15 – 10:20 Break.
10:20 – 11:00 Pre-imputation QC, imputation and post-imputation QC + *workshop* (part 2). [Bayram Cevdet Akdeniz]
11:00–11:05 Break
11:05–12:00 Overview of available GWAS data and tools. [Oleksandr Frei]
12:00 – 12:30 Lunch Break.
12:30 – 13:30 Brain imaging and genetics [Dennis van der Meer]

Day 3 [29.03]. GWAS essentials: association testing, annotation of the results and available resources.

09:30 – 10:30 Testing for association, meta-analysis and interpretation of the results: part 1 + *workshop*. [Kevin O'Connell]
10:30 – 10:35 Break.
10:35 – 11:35 Testing for association, meta-analysis and interpretation of the results: part 2 + *workshop*. [Kevin O'Connell]
11:35 – 12:05 Lunch Break.
12:05 – 12:50 FUMA, pathway and network analysis + *workshop*. [Shahram Bahrami]
12:50 – 12:55 Break
12:55 – 13:40 Heritability concept and misconceptions. Genetic architecture beyond heritability. [Francesco Bettella]

Day 4 [30.03]. Post-GWAS analyses.

09:30 – 10:30 LD-score regression and genetic correlation + *workshop*. [Alexey Shadrin]
10:30 – 10:35 Break.
10:35 – 11:35 Polygenic risk scores + *workshop*. [Alexey Shadrin]
11:35 – 12:05 Lunch break.
12:05 – 12:50 Mendelian randomization. [Dennis van der Meer]
12:50 – 13:35 Concluding remarks, discussion and distribution of examination tasks.