

Next Generation Sequencing data analysis

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Date: August/Sept (once every year)

Location: LUMC, Leiden (or occasionally outside Leiden)

Duration: 3 days

This course aims at PhD students, postdocs and senior researchers who are interested in, planning, or already working with next-generation sequencing. We welcome researchers from both the genomics and bioinformatics fields. Currently available technologies as well as hardware solutions will be presented and discussed. The focus of the course will be on data and ways to analyse the data.

There is a maximum of 60 places.

PhD students from MGC and GSMS get a discount of 100% and pay €0. Participants on behalf of BioSB pay €175 fee. All other academic participants pay €350 fee. Commercial participants pay €700 fee.

Program 2019

DAY 1

09:00	Welcome & Introduction to NGS	- Johan den Dunnen
09:30	Think before you start	- Judith Boer
10:00	Sample prep methods	- Susan Kloet
10:45	Coffee/tea	
11:10	Short-read sequencing technologies	- Wilfred van Ijcken
11:55	Long-read sequencing technologies	- Floyd Wiltink
12:40	Lunch break	
13:30	Building pipelines	- Ruben Vorderman
14:15	Alignment methods	- Ruben Vorderman
15:00	Coffee/tea	
15:30	RNA expression profiling	- Dani Borrás
16:15	De novo assembly	- Erwin Datema
17:00	End	

DAY 2

09:00	QC issues	- Thomas Chin-A-Woeng
09:30	Statistics for NGS	- Renee de Menezes
10:00	Data visualization	- Rutger Brouwer
10:30	Coffee/tea	
11:00	Variant calling (GATK)	- Redmar van den Berg
11:30	Structural variation analysis	- Victor Guryev
12:00	Cancer & somatic variants	- Dina Ruano
12:30	Lunch break	
13:30	NGS in Forensics	- Peter de Knijff
14:00	DNA methylation	- Ruben Boers

14:30 NGS in diagnostics (WES) - Claudia Ruivenkamp
15:00 Coffee/tea/drinks
15:30 Long read data analysis - Ali May
16:00 Single cell expression analysis - Ioannis Moustakas
16:30 End

DAY 3 - 28 August (CZ-4)

9:00 Computer Practicals Group A and B
Group A -Genome browsers: Ivo Horn and Sigrid Beiboer
Group B- Galaxy: Saskia Hiltemann, Helena Rasche and Ruben Vorderman
10:30 Coffee/tea
11:00 Computer Practicals group A and B
Group A – Galaxy: Saskia Hiltemann, Helena Rasche and Ruben Vorderman
B - Genome browsers: Ivo Horn and Sigrid Beiboer
12:30 Lunch break
13:30 ChIP-Seq - Hendrik Marks (RU Nijmegen)
14:00 Metagenomics - Floyd Wiltink (Hogeschool Leiden)
14:30 Non-invasive prenatal testing - Erik Sistermans (Amsterdam UMC)
15:00 Discussion, evaluation
15:30 Coffee/tea/drinks

17:00