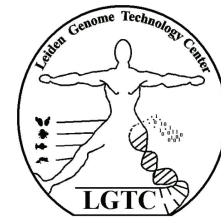


Onderzoeksschool
MEDISCH GENETISCH CENTRUM ZUID-WEST NEDERLAND
Special course
4th edition
Next generation sequencing (NGS) data analysis
Leiden University Medical Center, November 1-3, 2010
*Course organizers: Judith Boer, Johan den Dunnen, Matthew Hestand,
Wilfred van IJcken, Jeroen Laros*

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 and software solutions will be presented and discussed. The focus of the course will be on the data and ways to analyse these. Registration link at the MGC website: <http://www.medgencentre.nl>



Monday, November 1

09:00 Welcome coffee and sign-in: location – outside of collegezaal 3

1. The technologies, their output, and technology-related problems (collegezaal 3)

chair: Wilfred van IJcken (EMC Rotterdam)

- 09:20 Introduction to Next-Generation Sequencing – Wilfred van IJcken (EMC Rotterdam)
- 09:30 Helicos Heliscope – Michiel van Galen (LUMC Leiden)
- 10:00 Roche / 454 – Patrick van Zon (UMC Utrecht)
- 10:30 Coffee break
- 11:00 Illumina Genome Analyzer – Wilfred van IJcken (EMC Rotterdam)
- 11:30 ABI / SOLiD – Ies Nijman (Hubrecht Utrecht)
- 12:00 General discussion
- 12:15 Lunch

2. General Data Analysis (collegezaal 3)

chair: Jeroen Laros (LUMC Leiden & NBIC)

- 13:30 NBIC BioAssist NGS platform – Hailiang Mei (NBIC)
- 13:40 Alignment methods – Frans-Paul Ruzius (Hubrecht Utrecht & NBIC)
- 14:10 Galaxy and GAPSS – Jeroen Laros (LUMC Leiden & NBIC)
- 14:30 De novo assembly – Erwin Datema (Wageningen UR & NBIC)
- 15:00 Coffee break
- 15:30 Data visualization – Rutger Brouwer (EMC Rotterdam & NBIC)
- 16:00 General IT requirements, data transport, data storage – Mirjam van den Hout (EMC Rotterdam)
- 16:30 End of Day 1

Tuesday, November 2

3. Specific Applications I and Things to Know (collegezaal 3)

chair: Judith Boer (LUMC Leiden)

- 09:00 ChIP-seq – Hendrik Marks (RU Nijmegen)
- 09:30 DNA methylation – Arjen Brinkman (RU Nijmegen)
- 10:00 Structural variation analysis using NGS data – Victor Guryev (Hubrecht Utrecht)
- 10:30 Coffee break
- 11:00 RNA expression profiling – Anna Zakrzewska (Leiden University)
- 11:30 Statistics for NGS – Erik van Zwet (LUMC Leiden)
- 12:00 Think before you start – Judith Boer (LUMC Leiden)

Lunch 12:30 – 13:30

Computer Practicals: J1-82 (PC room) and J1-83 (laptop room)

NextGENe – Megan Manion (SoftGenetics) and Fons Elstrodt (Bioke)
Introduction to Galaxy – Marc van Driel (NBIC)

13:30 30 participants Introduction to Galaxy (laptop room), 30 participants NextGENe (PC room)

15:00 Coffee break

15:30 30 participants NextGENe (PC room), 30 participants Introduction to Galaxy (laptop room)

17:00 End of Day 2

Wednesday, November 3

4. Specific applications II (collegezaal 3)

chair: Wilfred van IJcken (EMC Rotterdam)

- 09:00 Data from 150 sequence capture samples; QC issues – Yu-Ching Lai (LUMC Leiden)
- 09:30 Exome sequencing in a diagnostic setting – Rowida al Momani (LUMC Leiden)
- 10:00 Analysis of array capture data on amplified tumor DNA – Pim French (EMC Rotterdam)
- 10:30 Coffee break
- 11:00 Metagenomics – Sacha van Hijum (NIZO food research, CMBI bacterial genomics, Nijmegen)
- 11:30 Future developments – Wilfred van IJcken (EMC Rotterdam)

Lunch 12:00 – 13:00

Computer Practicals: J1-82 (PC room) and J1-83 (laptop room)

CLCbio – Patrick Dekker and Ben Turner (CLCbio)
GAPSS & Galaxy – Jeroen Laros and Michiel van Galen (LUMC Leiden)

13:00 30 participants GAPSS & Galaxy (laptop room), 30 participants CLCbio (PC room)

14:30 Coffee break

15:00 30 participants CLCbio (PC room), 30 participants GAPSS & Galaxy (laptop room)

16:30 End of Day 3 – Please return evaluation forms and badges