

Onderzoeksschool
MEDISCH GENETISCH CENTRUM ZUID-WEST NEDERLAND
Special course
3rd edition

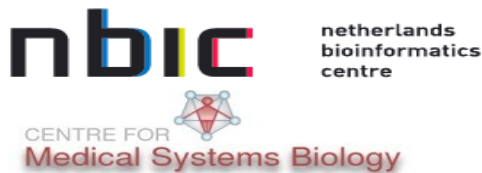
Next generation sequencing (NGS) data analysis

Leiden University Medical Center, March 17-19, 2010

Course organizers: Matthew Hestand, Judith Boer, Johan den Dunnen (LUMC)

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 the data.

Registration link at the MGC website: www.medgencentre.nl



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Wednesday, March 17

9:00 Welcome coffee and sign-in: location – outside of collegezaal 5

1. The technologies, their output, and technology-related problems (collegezaal 5)

chair: Johan den Dunnen (LUMC Leiden)

- 9:15 Opening Talk - Johan den Dunnen (LUMC Leiden)
- 9:30 Helicos Heliscope – Michiel van Galen (LUMC Leiden)
- 10:00 Roche / 454 - Marja Jakobs (AMC Amsterdam)
- 10:30 Coffee break
- 11:00 Illumina Genome Analyzer – Luc J Smink (Illumina)
- 11:30 ABI / SOLiD - Wigard Kloosterman (Hubrecht Utrecht)
- 12:00 General Terminology - Matthew Hestand (LUMC Leiden & NBIC)
- 12:10 NBIC BioAssist NGS platform - Hailiang (Leon) Mei (NBIC)
- 12:20 General discussion
- 12:30 Lunch

2. General Data Analysis (collegezaal 5)

chair: Matthew Hestand (LUMC Leiden & NBIC)

- 13:30 Alignment methods - Frans-Paul Ruzius (Hubrecht Utrecht & NBIC)
- 14:00 Paired End Data (Pindel) - Kai Ye (LUMC Leiden)
- 14:30 De novo assembly - Jan van Haarst (Wageningen UR & NBIC)
- 15:00 Data visualization - Wilfred van Ijcken (EMC Rotterdam)
- 15:30 Coffee break
- 16:00 CLCbio - Patrick Dekker and Ben Turner (CLCbio)
- 16:20 NextGENe - Megan Manion (SoftGenetics)
- 16:40 Galaxy and GAPSS - Matthew Hestand (LUMC Leiden & NBIC)

17:00 End of Day 1

Thursday, March 18

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

NextGENe - Megan Manion (SoftGenetics) and Fons Elstrodt (Bioke)

Linux and Galaxy basics - Matthew Hestand, Michiel van Galen, Michel Villerius (LUMC Leiden)

[*sign-in during the Linux and Galaxy practical](#)

9:00 31 participants Linux and Galaxy basics (laptop room), 31 participants NextGENe (PC room)

10:30 [Coffee break](#)

11:00 31 participants NextGENe (PC room), 31 participants Linux and Galaxy basics (laptop room)

[Lunch 12:30-13:30](#)

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

chair: Judith Boer (LUMC Leiden)

13:30 ChIP-seq - Hendrik Marks (RU Nijmegen)

14:00 DNA methylation - Arjen Brinkman (RU Nijmegen)

14:30 miRNA profiling - Eugene Berezikov (Hubrecht Utrecht)

15:00 Statistics for NGS - Peter-Bram 't Hoen (LUMC Leiden)

15:30 [Coffee break](#)

16:00 General IT requirements, data transport, data storage - Peter Walgemoed (Carelliance)

16:30 Think before you start - Judith Boer (LUMC Leiden)

17:00 [End of Day 2](#)

[Bonus: Drinks till 18:00](#)

Friday, March 19

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

CLCbio - Patrick Dekker and Ben Turner (CLCbio)

GAPSS - Matthew Hestand, Michiel van Galen, Michel Villerius (LUMC Leiden)

[*sign-in during the GAPSS practical](#)

9:00 31 participants GAPSS (laptop room), 31 participants CLCbio (PC room)

10:30 [Coffee break](#)

11:00 31 participants CLCbio (PC room), 31 GAPSS (laptop room)

[Lunch 12:30-13:30](#)

4. Specific applications II (collegezaal 4)

chair: Peter-Bram 't Hoen (LUMC Leiden)

13:30 Metagenomics - Sacha van Hijum (NIZO food research, CMBI bacterial genomics, Nijmegen)

14:00 RNA expression profiling - Annemarie Meijer (Leiden University)

14:30 Targeted Re-sequencing and SNP discovery - Ies Nijman (Hubrecht Utrecht)

15:00 Indexing, PCR-based resequencing, and data analysis - Dirk Goossens (VIB / University of Antwerp, Belgium)

15:30 [Coffee break](#)

16:00 Future developments - Gert-Jan van Ommen (LUMC Leiden)

16:30 General discussion

16:45 Evaluation form

17:00 [End of Day 3](#)