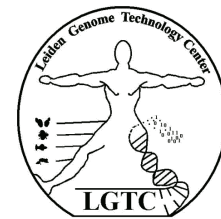


Onderzoeksschool
MEDISCH GENETISCH CENTRUM ZUID-WEST NEDERLAND
Special course
5th edition
Next generation sequencing (NGS) data analysis
Leiden University Medical Center, September 5-7, 2011
*Course organizers: Judith Boer, Johan den Dunnen, Wilfred van IJcken,
Jeroen Laros*

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, September 5

09:00 Welcome coffee and sign-in: location – outside of collegezaal 5

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

chair: Wilfred van IJcken (EMC Rotterdam)

- 09:20 Introduction to Next-Generation Sequencing – Johan den Dunnen (LUMC Leiden)
- 09:50 Roche 454 / Ion Torrent – Harry Cuppens (KU Leuven)
- 10:30 Coffee break
- 11:00 Illumina Genome Analyzer – Wilfred van IJcken (EMC Rotterdam)
- 11:30 ABI SOLiD – Wigard kloosterman (UMC Utrecht)
- 12:00 General discussion
- 12:15 Lunch

2. General Data Analysis (collegezaal 5)

chair: Jeroen Laros (LUMC Leiden & NBIC)

- 13:30 NBIC BioAssist NGS platform – Victor Guryev (Hubrecht Utrecht)
- 13:40 Alignment methods – Frans-Paul Ruzius (Hubrecht Utrecht & NBIC)
- 14:10 Galaxy and GAPSS – Jeroen Laros (LUMC Leiden & NBIC)
- 14:30 Combining SV detection tools – Victor Guryev (Hubrecht Utrecht)
- 15:00 Coffee break
- 15:30 De Novo assembly – Sandra Smit (Wageningen UR)
- 16:00 Data visualization – Rutger Brouwer (EMC Rotterdam & NBIC)
- 16:30 End of Day 1

Tuesday, September 6

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

chair: Judith Boer (LUMC Leiden)

- 09:00 Think before you start – Judith Boer (LUMC Leiden)
- 09:30 QC issues – Peter-Bram 't Hoen (LUMC Leiden)
- 10:00 Statistics for NGS – Erik van Zwet (LUMC Leiden)
- 10:30 Coffee break
- 11:00 ChIP-seq – Hendrik Marks (RU Nijmegen)
- 11:30 DNA methylation – Arjen Brinkman (RU Nijmegen)
- 12:00 RNA expression profiling – Peter-Bram 't Hoen (LUMC Leiden)

Lunch 12:30 – 13:30

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

NextGENe – Robert Akkers 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, September 7

4. Specific applications II (collegezaal 3)

chair: Wilfred van IJcken (EMC Rotterdam)

- 09:00 Metagenomics – Sacha van Hijum (NIZO food research, CMBI bacterial genomics, Nijmegen)
- 09:30 Exome sequencing in a diagnostic setting – Christian Gilissen (UMCN Nijmegen)
- 10:00 De Novo assembly – Jurgen Nijkamp (TU Delft)
- 10:30 Coffee break
- 11:00 Structural variation analysis using NGS data – Victor Guryev (Hubrecht Utrecht)
- 11:30 Future developments: single molecule sequencing – Johan den Dunnen (EMC Rotterdam)

Lunch 12:00 – 13:00

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

CLCbio – Bela Tiwari and Ben Turner (CLCbio)
Interpreting NGS exome data – Christian Gilissen (UMCN Nijmegen)

13:00 30 participants Interpreting NGS exome data (laptop room), 30 participants CLCbio (PC room)

14:30 Coffee break

15:00 30 participants CLCbio (PC room), 30 participants Interpreting NGS exome data (laptop room)

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