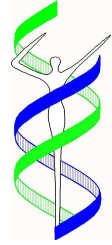




Molecular Medicine
Postgraduate School



Erasmus Postgraduate school Molecular Medicine and
Medisch Genetisch Centrum zuid-west Nederland

special course

6th edition

Next generation sequencing (NGS) data analysis

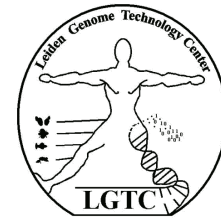
Erasmus Medical Center, September 11–13, 2012

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: <https://www.molmed.nl/>



Tuesday, September 11

09:00 Welcome coffee and sign-in: location – room Ae 4.06

1. The technologies, their output, and technology-related problems (room Ae 4.06)

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 – Marieke Simonis (UMC Utrecht)

12:00 General discussion

12:15 Lunch

2. General Data Analysis (room Ae 4.06)

chair: Jeroen Laros (LUMC Leiden)

13:20 NBIC BioAssist NGS platform – Hailiang Mei (NBIC)

13:30 Alignment methods – Martijn Vermaat (LUMC Leiden & NBIC)

14:00 Galaxy and GAPSS – Jeroen Laros (LUMC Leiden)

14:30 Combining SV detection tools – Eric-Wubbo Lameijer (LUMC Leiden)

15:00 Coffee break

15:30 De Novo assembly – Erwin Datema (KeyGene)

16:00 Data visualization – Rutger Brouwer (EMC Rotterdam & NBIC)

16:30 End of Day 1

Wednesday, September 12

3. Things to Know and Specific Applications I (room Ae 4.06)

chair: Judith Boer (EMC Rotterdam & LUMC Leiden)

- 09:00 Think before you start – Judith Boer (EMC Rotterdam & 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 – Femke Simmer (RU Nijmegen)
- 12:00 RNA expression profiling – Peter-Bram 't Hoen (LUMC Leiden)

Lunch 12:30 – 13:30

Computer Practicals: COO-3 (PC room 1) and COO-5 (PC room 2)

NextGENe – Robert Akkers and Fons Elstrodt (Bioke)

Introduction to Galaxy – Rutger Brouwer (EMC Rotterdam & NBIC), Frank Sleutels (EMC Rotterdam) and Leon Mei (NBIC)

13:30 30 participants Introduction to Galaxy (PC room 1), 30 participants NextGENe (PC room 2)

15:00 Coffee break

15:30 30 participants NextGENe (PC room 2), 30 participants Introduction to Galaxy (PC room 1)

17:00 End of Day 2

Thursday, September 13

4. Specific applications II (room Ae 4.06)

chair: Johan den Dunnen (LUMC Leiden)

- 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 (ERIBA Groningen)
- 11:30 Future developments: single molecule sequencing – Johan den Dunnen (LUMC Leiden)

Lunch 12:00 – 13:00

Computer Practicals: COO-3 (PC room 1) and COO-5 (PC room 2)

CLCbio – Bela Tiwari and Ben Turner (CLCbio)

Genomatix – Korbinian Grote and Mark Hughes (Genomatix)

13:00 30 participants Genomatix (PC room 1), 30 participants CLCbio (PC room 2)

14:30 Coffee break

15:00 30 participants CLCbio (PC room 2), 30 participants Genomatix (PC room 1)

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