



European Cooperation in Science and Technology and  
Medisch Genetisch Centrum zuid-west Nederland

special course

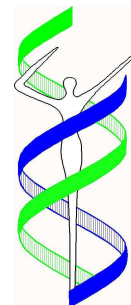
8th edition

## Next generation sequencing (NGS) data analysis

Leiden University Medical Center, September 1–3, 2014

*Jeroen Laros, Wilfred van IJcken, Judith Boer,*

*Roland Kuiper, Tom van Wezel, Johan den Dunnen*



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: <http://www.medgencentre.nl/>



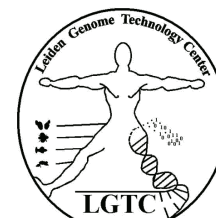
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## Monday, September 1

09:00 Welcome coffee and sign-in: location – room T.B.A.

### 1. The technologies, their output, and technology-related problems (lecture hall C5)

*chair: Wilfred van IJcken (EMC Rotterdam)*

09:30 Introduction to Next-Generation Sequencing – Wigard Kloosterman (UMC Utrecht)

10:00 Ion Torrent – Kris van der Gaag (LUMC Leiden)

10:30 Coffee break

11:00 Illumina Genome Analyzer – Wilfred van IJcken (EMC Rotterdam)

11:30 PacBio RSII – Yahya Anvar (LUMC Leiden)

12:00 Future developments: single molecule sequencing – Wilfred van IJcken (EMC Rotterdam)

12:30 Lunch

### 2. General Data Analysis (lecture hall C5)

*chair: Jeroen Laros (LUMC Leiden)*

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

14:00 Combining tools into a pipeline – Jeroen Laros (LUMC Leiden)

14:30 Variant calling using GATK – Ies Nijman (UMC Utrecht)

15:00 Coffee break

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

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

16:30 End of Day 1

## Tuesday, September 2

### 3. Things to Know and Specific Applications I (lecture hall C3)

*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 DNA methylation – Arjen Brinkman (RU Nijmegen)
- 10:45 Coffee break
- 11:15 Statistics for NGS – Renee Menezes (VUMC Amsterdam)
- 11:45 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)

- CLCbio – Holger Karas (CLCbio)
- NextGene – Fons Elstrodt (Bioke)

13:30 30 participants CLCbio (laptop room), 30 participants NextGene (PC room)

15:00 Coffee break

15:30 30 participants NextGene (PC room), 30 participants CLCbio (laptop room)

17:00 End of Day 2

## Wednesday, September 3

### 4. Specific applications II (lecture hall C5)

*chair: Bas Dutilh (Utrecht University)*

- 09:00 Metagenomics – Bas Dutilh (Utrecht University)
- 09:30 Exome sequencing in a diagnostic setting – Christian Gilissen (UMCN Nijmegen)
- 10:00 De Novo assembly applications – Ken Kraaijeveld (VU Amsterdam)
- 10:30 Coffee break
- 11:00 Structural variation analysis using NGS data – Victor Guryev (ERIBA Groningen)
- 11:30 Non Invasive Prenatal Testing – Frank Sleutels (EMC Rotterdam)

Lunch 12:00 – 13:00

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

- Introduction to Galaxy – Rutger Brouwer (EMC Rotterdam), Frank Sleutels (EMC Rotterdam) and Leon Mei (LUMC Leiden)
- Interpreting NGS exome data – Christian Gilissen (UMCN Nijmegen)

13:00 30 participants Introduction to Galaxy (PC room), 30 participants Interpreting NGS exome data (laptop room)

14:30 Coffee break

15:00 30 participants Interpreting NGS exome data (laptop room), 30 participants Introduction to Galaxy (PC room)

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