

MOTI 2018

preliminary program

Sunday 23 September

Welcome Get Together: „Das Krahvogel“ Anichstrasse 12; 19:00

Monday, 24 September:

General introduction: 08.00 – 09.00 *PR-Nord*

Lecture: 09.15 – 12.00

History of NGS

- NGS Applications in ecology
- NGS versus species specific primers – when to use what?
- Sequencing platforms
- Illumina's NGS sequencer models and their specifications

Lecture: 13.00 – 17.30

NGS study design and sample preparation

- Key points for study design (gene selection and amplicon length, tagging, controls, clean up, quantification, pooling, costs, sequencer choice)
- Steps from DNA extraction to sending your samples

Dinner 19:00

Tuesday, 25 September:

Lecture: 08.00 – 12.00

Illumina NGS runs – how does the run work?

- PCR and bridge amplification
- How does cluster density (template loading) affect your sequencing results?
- Possible problems (primer bias, contamination and quantification)

Computer Lab: 13.00 – 17.30

Data receiving and computational needs

- Look of the raw data (file formats and lines)
- Why a Linux operating system is indispensable
- Computational power for data processing
- Backup systems for your working group

Data processing for targeted next generation sequencing

- Quality check of raw data

Wednesday, 26 September:

Computer Lab: 08.00 – 12.00 and 13.00 – 18.00

Data processing for targeted next generation sequencing (continued)

- Merging of paired-end data
- Data trimming

Thursday, 27 September:

Computer Lab: 08.00 – 12.00 and 13.00 – 18.00

Data processing for targeted next generation sequencing (continued)

- BLAST search versus the use of molecular operational taxonomic units (MOTUs)
- Processing local BLAST search

Friday, 28 September:

Computer Lab: 08.00 – 12.00

Data interpretation

- Run quality per sample
- Do I have to set a cutoff?
- What was detected - contamination, environmental DNA, consumer or prey DNA?
- Check for multiple BLAST hits per sequence

What can sequencing companies or NGS core facilities provide you?

Questions and feedback

Lunch buffet and MOTI certificates