DNA Sequencing and Variant Analysis: Basics of Sanger and Next Generation Sequencing

Dates: 11 – 15 November 2019  
Time: 9.00 – 17.00  
Organizers/Tutors: Dr. Vidhya Jagannathan  
                      Prof. Dr. Tosso Leeb  
                      Dr. Michaela Drögemüller  
Venue: Institute of Genetics, Bremgartenstrasse 109a, 3012 Bern

Course Description:
Theory and experimental procedures of automated DNA sequencing and data analysis. The course will consist of approximately 4 hours practical work and demonstrations in the lab, 16 hours accompanying lectures, and 20 hours of computer exercises. During the lab part, PCR products will be purified and sequenced on an automated capillary sequencer (Sanger). During the theoretical part, different sequencing techniques will be introduced (Sanger & different next generation sequencing methods). Additionally, bioinformatic tools for the analysis of Sanger and Next Generation Sequencing data will be presented. The participants will analyze their own experimental Sanger data and are expected to deduce the functional consequences of the identified DNA variants (e.g. amino acid substitutions in an encoded protein). The next generation sequencing part will cover variant detection in genomic DNA sequences and quantitative expression analyses in RNA-seq data. There will be a written test at the end of the course.

Limitation: 8 students  
Credits: 2.0 ECTS  
Registration deadline: 30 September 2019  
Registration required: yes: To register now, please send an e-mail to: info@gcb.unibe.ch You will receive a confirmation as well as a reminder mail to register on CTS/KSL in due time.  
CTS/KSL: Registration on the CTS/KSL platform is required and will be possible from September 16th, 2019 on. Grades will be entered on the CTS/KSL platform after the course, and participants will receive an automatically generated e-mail informing about the new entry in the CTS/KSL.  
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