

# **Bioinformatics of Next Generation Targeted Re-sequencing Design and Analysis**

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Project start: Aug 2010 Application deadline: 30<sup>th</sup> May 2009

## ***Project description***

A new generation of DNA sequencing instruments is currently dramatically changing the field of molecular genetics and pharmacogenomics by enabling rapid acquisition of large data amounts. The current project is part of a larger project developing to a pipeline for targeted resequencing of genomic regions using next generation sequencing platforms. In this project we will develop and apply a design and analysis pipeline for high throughput sequencing of specific regions of for example cancer samples using the Selector Technology™. The Selector Technology™ enables selective amplification of large numbers of genomic loci in a single reaction enabling resequencing of large gene sets involved in for example cancer.

The project involves further development of the design and analysis software, algorithms and tools for next generation sequencing. using the ABI SOLiD, 454 Roche and Illumina GA instruments. Projects involving data alignment and assembly, assessment of available analysis software, bioinformatic design, and development of new software are ongoing. The exact objective will be adjusted depending on student background and skills. The projects may serve as a foundation to further PhD studies or employment in the spin out company.

## ***Olink Genomics AB***

Olink Genomics is a spin out company formed by a team of enthusiastic entrepreneurs and researchers at Uppsala University together with Olink Biosciences AB. The company is located in Uppsala Science. The company is based on beyond state of the art technology enabling researchers globally to execute projects previously not possible. The company is commercializing services and reagent kits for targeted next generation sequencing.

## ***Applicant***

Interesting applicants include students with background in bioinformatics, programming, engineering and software development however other backgrounds may be acceptable. Previous programming experience is an advantage, interest and motivation is essential. After initial introduction the project is designed to allow the student to gradually design and push the research project independently, however always in the context of the group, and good communicative and social skills are required. Applications will be evaluated and subsequently interviews will be performed. CV comprising relevant educational and professional history including grades is mandatory; references and/or letter(s) of recommendation may increase chances to be accepted.

Applications by mail only