NEXUS Personalized Health Technologies

Newly funded Personalized Health Projects

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We gladly report that we are part of three successful grant submissions to the first coordinated calls of the "SFA Personalized Health and Related Technologies" (PHRT) and "Swiss Personalized Health Network" (SPHN).

The **Swiss Variant Interpretation Platform for Oncology (SVIP-O)** is a joint proposal to BioMedIT and SPHN, with the goal to provide a central resource for clinical variant annotation and interpretation, which will serve both the diagnostic practice in Swiss clinics and the research efforts in biomedical institutions. Based on initial work of the SIB Somatic Mutation Calling working group, which encompasses representatives from all university hospitals, many regional hospitals, and a large number of bioinformatics core facilities / research groups, the absence of such a resource was identified as a main obstacle for robust, efficient, and reproducible variant annotation, as well as interpetation. SVIP-O will address this need. The role of NEXUS will be to liase between the clinical and technical aspects, to assist with data integration from a wide variety of sources, and to implement its clinical reporting expertise. We envision SVIP to also be extended to other fields like rare diseases and human genetics.

We will contribute to the **Swiss Molecular Pathology and Tumor Immunology Breakthrough Platform** together with Prof. Dr. Marc Rubin (University of Bern and Inselspital). The main goals of this combined SPHN/PHRT proposal is to address needs for robust precision oncology genomics tools to assist Swiss pathologies. The research part is focussing on a better understanding of responsiveness in some patients to immunotherapy, but not in others. The role of NEXUS will be in improving variant prioritization and therapy recommendations. Furthermore, supporting neoantigen prediction and clinical reporting.

NEXUS will also collaborate on initiating the **Single-cell genomics platform** together with Dr. Christian Beisel, Dr. Jack Kuipers, and Prof. Dr. Niko Beerenwinkel. This PHRT infrastructure proposal aims at implementing a core facility for single cell RNA and DNA sequencing, including the proper

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Flyer Small Molecule Screening (PDF, 10.2 MB)

tool box to analyse the generated data. The project aims at showcasing the platforms capabilities by parallel sequencing of the exome and transcriptome of single cells. NEXUS will be implementing existing single-cell RNA data anlysis methods and support in the development of novel methods for single-cell DNA data analysis.

We are very excited and are looking forward to launch the projects beginning of 2018 - we will keep you updated! And look out, we are going to hire soon.