ZNZ PhD Retreat 2020

Agenda

Friday, 8 May

12:00-13:30 **Patient demonstration** (live online from Valens)
Dr. Roman Gonzenbach, Head of Neurology and Neurorehabilitation Clinic Valens.

16:00-17:00 **Improving the reproducibility of science: general concepts and some specific statistical issues in neuroscience** (live online)
Dr. Simon Schwab, Postdoctoral Research Fellow, Center for Reproducible Science, UZH

Reproducibility is a highly relevant topic for early-career scientists to align with rigorous and sustainable research. In this talk, I will explain the causes of irreproducible research and provide solutions, which will lead to better science. I will introduce preregistration and open science with a case study from psychiatry. Not only general concepts of exploratory versus confirmatory research are discussed, but also some specific statistical issues observed in neuroscience.

Saturday, 9 May

12:00-13:00 **Translational neuromodeling, computational psychiatry and computational psychosomatics** (live online)
Prof. Klaas Enno Stephan, Translational Neuromodeling Unit, Inst. for Biomed. Engineering, UZH/ETH

For many brain diseases, particularly in psychiatry, we lack clinical tests for differential diagnosis and cannot predict optimal treatment for individual patients. This presentation outlines a translational neuromodeling framework for inferring subject-specific mechanisms of brain disease from non-invasive measures of behaviour and neuronal activity. Guided by clinical theories of maladaptive cognition and aberrant brain-body interactions, generative models can be developed that have potential as "computational assays". Evaluating the clinical utility of these assays requires prospective patient studies that address concrete clinical problems, such as treatment response prediction. If successful, computational assays may help provide a formal basis for differential diagnosis and treatment predictions in individual patients and, ultimately, facilitate the construction of mechanistically interpretable disease classifications.

Homework

- Please send your 2 ½ min video pitch by latest 6 May.
- Please watch all video pitches of your colleagues.
- With who would you team up for a collaboration to advance your project to a degree, which would not be possible alone? In the best case, the projects of both collaborators would benefit but it may well be mainly one project profiting from the collaboration.
- Contact the corresponding colleague and work out together (by phone, email, Teams, Skype, Zoom, etc.) a hypothetical joint project. Briefly describe the collaboration in detail (joint hypotheses, methods, resources needed, contributions of each partner and expected results) in a document of two pages and submit by latest Monday, 11 May.