# Neuroscience Lecture

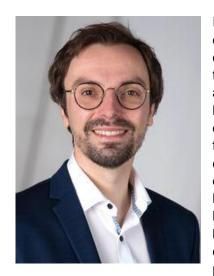**Friday, 19 April 2024**

**12.00 o'clock**

**Inselspital, Kursraum Neurologie
INO B118, Entrance 34**
Rosenbühlgasse 25 3010 Bern

## Some neuro-computational models of social decision-making and learning

## Christoph Korn
*Heidelberg University Hospital*

In social interactions, humans often resort to heuristic decision-making and learning strategies. These strategies can be described with reinforcement learning models and can be linked to parts of the medial prefrontal cortex (MPFC). First, I will present a series of studies that specify how humans combine optimal and heuristic solutions to maximize rewards for themselves and for others in multistep decision scenarios. Model-based analyses of fMRI data suggest a role of the MPFC in the computation of the employed policies and of the uncertainty associated with relying on these policies. Second, I will describe experiments showing how humans learn about other people's character traits. The best-fitting models combine principles derived from reinforcement learning algorithms with participants' world knowledge about the distributions and interrelations of different character traits. I will present an fMRI study testing if these interrelations between character traits are represented as "grid-like code" in the MPFC. Taken together, the to-be-presented projects aim at providing neuro-computational accounts of the trade-offs in complex social decision-making and learning processes. I will briefly outline ongoing and future research projects that build on these insights to elucidate how social decision-making and learning can go awry in psychiatric populations.

Chair: Prof. Athina Tzovara