**Département de psychiatrie**
Centre de neurosciences psychiatriques
Site de Cery
CH-1008 Prilly - Lausanne

# Centre de Neurosciences Psychiatriques

# CNP SEMINAR

## ANNOUNCEMENT

**Monday, September 30, 2019, 13:30**

## "From human behavior and metabolism to psychopathology: Studies on virtual reality and magnetic resonance spectroscopy"

**Prof. Carmen Sandi**

Laboratory of Behavioral Genetics
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Lausanne
Invited by Kim Do Cuénod
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**Salle de séminaires 1er étage CNP**
**Hôpital Psychiatrique de Cery**
**Site de Cery, CH-1008 Prilly-Lausanne**

High trait anxiety is a vulnerability factor for the development of stress-related psychopathologies, such as anxiety disorders and depression. However, its behavioral and cognitive manifestations, as well as the neurobiological underpinnings, remain rather unclear. In our lab, we have developed a range of tasks and approaches, including virtual reality (VR), to reveal behavioral manifestations and cognitive computations underlying variation in general and social anxiety. Using VR coupled to machine learning, we can now predict individuals' trait anxiety as well as heart rate variability in response to stressful challenges. Magnetic resonance spectroscopy (MRS) analyses are starting to point at specific metabolites in motivational brain areas, such as the nucleus accumbens / ventral striatum, in the prediction of subsequent behavior. Our goal is to extend these powerful approaches from our current emphasis on normal variation to better understand, predict and potentially treat psychopathologies.

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**Selected publications:**

1. Berchio C, Rodrigues J, Strasser A, Michel CM, Sandi C (2019) Trait anxiety on effort allocation to monetary incentives: a behavioral and high-density EEG study. *Transl Psychiatry* 9(1): 174-183.

2. Strasser A, Xin L, Gruetter R, Sandi C (2019) Nucleus accumbens neurochemistry in human anxiety: A 7 T 1H-MRS study. *Eur Neuropsychopharmacol* 29 (3): 365-375.

3. Weger M, Sandi C (2018) High anxiety trait: A vulnerable phenotype for stress-induced depression. *Neurosci Biobehav Rev* 87: 27-37.