Interview with **Paul Klauser**, recipient of a NCCR-SYNAPSY clinician-scientist grant.

Paul Klauser is passionate about science and psychiatry and with an MD-PhD under his belt he portrays perfectly what NCCR-SYNAPSY is all about. Here he talks of his journey from medicine to research, full of enthusiasm for SYNAPSY.

SYNAPSY : *What made you choose to do an MD-PhD?*
Paul Klauser : While studying medicine at the University of Geneva (UNIGE), I attended the Neuroclub. Thanks to the many activities organized by this club, I became more and more interested by the neuroscience research. After medical school, I've joined the late Dominique Muller's laboratory in the department of basic Neurosciences to finalize a neurobiology thesis on synaptic plasticity during the development and learning processes.

S : *Afterwards you started your clinical training. Why the move from neuroscience to psychiatry?*
PK : Working on my MD-PhD, I realized that I missed the contact with patients and wanted to return to medicine. It is in contact with Stephan Eliez (Office Medico-pédagogique, Geneva), that I turned to child psychiatry. During my PhD, I had addressed the themes of brain development and learning, two extremely relevant factors in child and adolescent psychiatry. After three years of clinical training, I went to Melbourne for a three-year post-doctoral in the field of early psychosis. Today I'm back in Switzerland to complete my clinical training. I am both physician-assistant at the CHUV General Psychiatry Department, in the section of the Spectrum Disorder of Schizophrenia, and a researcher at the Center for Psychiatric Neurosciences, supported by SYNAPSY.

S: *What are your current research interests?*
PK : At the moment I'm working with Kim Do and Philippe Conus on Synapsy Axis 1 research: "Genetics and the Brain". The project's goal is to identify biomarkers in young patients suffering early psychosis. We want to better understand the pathophysiology behind psychosis and importantly, facilitate the clinical identification of early psychosis patients to enable early and targeted intervention.

S: *Could you expand on that?*
PK : Using magnetic resonance imaging (MRI) of the brain, we try to predict the symptomatic evolution of patients. Specifically, we measure morphological variables (e.g. grey matter volumes) in the brains of young patients with early psychosis and put them in relation to longitudinal clinical data.

S: *Are you also doing fundamental neuroscience research?*
PK : Yes ! With the MRI we can identify the brain structures involved in the early stages of the disease in our patients, but it is only with the animal model that we can actually investigate the underlying pathophysiological mechanisms. Kim Do's laboratory has a genetically modified mouse model lacking glutathione (hypothesis of oxidative stress in schizophrenia).

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By applying methods of microscopy and electrophysiology, this model allows us to search what are the cellular changes underlying visible coarser abnormalities of brain structure in our patients.

S: *SYNAPSY'S main research goal is to unite brain research and psychiatry. What did you lack going from medicine into research?*
PK : At the beginning, technically I was lacking a solid base in mathematics and statistics. I also had a few gaps in molecular biology and optical microscopy but luckily most was covered by the courses I took during my PhD at the Lemanic Neuroscience Doctoral School. In the end the hardest thing was dealing with frustration! Rewards are big in research, but few and far between !

S: *How do you think SYNAPSY is helping to connect science and psychiatry?*
PK : Frankly, without the grant from SYNAPSY, I simply wouldn't have been able to have the opportunity to continue my research while finishing my clinical training. This dual activity allows me not only to enrich my research hypotheses with questions raised while working with patients, but also to more easily question aspects of clinical practice. Having one foot in research and the other in clinic also promotes meetings between clinicians and scientists and this is ultimately the most important fact to me !

Interviewed by Yann Bernardinelli, December 10, 2015 at the CHUV.