



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

Centre de Neurosciences Psychiatriques

CNP SEMINAR

ANNOUNCEMENT

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“Novel phenotypic signatures in immunological and neurological diseases: from cystic fibrosis to autism”

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After a Ph.D. study at the Institute of Embryology of CNRS and College de France and a postdoc at Stanford University, Dr Tirouvanziam has been a long-term associate of the Prof Herzenberg Laboratory and is currently an Instructor in the Department of Pediatrics at Stanford,

His approach consists in developing minimally invasive, non-artefactual protocols for human sample collection and processing, combined with high-content “phenomic” platforms using digital flow cytometry, image cytometry and mass spectrometry, so as to provide direct, yet rich snapshots of human pathophysiology. This approach has been fully validated in the context of the fatal disease cystic fibrosis, starting with the observation of novel redox, functional and signaling dysfunctions in a subset of inflammatory cells (neutrophils) and leading to the development of an experimental treatment, currently in a multicenter phase 2b trial, as well as several novel options for intervention.

Further collaborative applications of this direct “phenomic” approach in the contexts of asthma, allergy and autism spectrum disorders have yielded novel biomarkers for disease monitoring and most importantly, novel mechanistic insights into disease, as it occurs in patients.

Selected papers:

Tirouvanziam et al., High-dose oral N-acetylcysteine, a glutathione prodrug, modulates inflammation in cystic fibrosis, PNAS, 103, 4628-4633, 2006

Makam & al, Activation of critical, host-induced, metabolic and stress pathways marks neutrophil entry into cystic fibrosis lungs, PNAS, 106, 5779-5785, 2009