

## SEMINARIO / SEMINAR

### **Titolo / Title:**

**The quest for brain identifiability**

### **Quando / When:**

8 Settembre 2023, ore 11:00 / 8<sup>th</sup> September 2023 at 11:00 CET

### **Dove / Where: SALA CONVEGNI del CAST**

### **Relatore / Speaker: Dr Enrico Amico**

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**Abstract:** In the 17th century, physician Marcello Malpighi observed the existence of distinctive patterns of ridges and sweat glands on fingertips. This was a major breakthrough, and originated a long and continuing quest for ways to uniquely identify individuals based on fingerprints, a technique massively used until today. It is only in the past few years that technologies and methodologies have achieved high-quality measures of an individual's brain to the extent that personality traits and behavior can be characterized. The concept of "fingerprints of the brain" is very novel and has been boosted thanks to a seminal publication by Finn et al. in 2015. They were among the first to show that an individual's functional brain connectivity profile is both unique and reliable, similarly to a fingerprint, and that it is possible to identify an individual among a large group of subjects solely on the basis of her or his connectivity profile. Yet, the discovery of brain fingerprints opened up a plethora of new questions. In particular, what exactly is the information encoded in brain connectivity patterns that ultimately leads to correctly differentiating someone's connectome from anybody else's? In other words, what makes our brains unique?

In this talk I am going to partially address these open questions while keeping a personal viewpoint on the subject. I will outline the main findings, discuss potential issues, and propose future directions in the quest for identifiability of human brain networks.