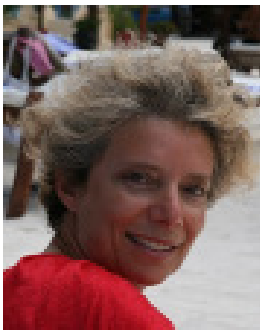
Stephenson School of Biomedical Engineering
Seminar Series Presents

HOW SIMPLE IS THE BRAIN COMPLEXITY



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Friday, Sept. 25, 2020 | 9 a.m.

zoom
Meeting ID: 956 4340 5247
Passcode: 00251715

ABSTRACT:

The neurological or psychiatric diseases distort the communication in the brain's connected networks. In a sense, a person with a brain disorder can become unreachable due to dysfunctional integration within and across brain networks as well as impaired processing and integration of incoming sensory signals. The brain's ability to adapt depends on feedback signaled through the five sensory channels, which produce neuronal synchrony, which drives neuronal plastic adaptations. Hence, deficiencies in communication via the senses requires alternative ways to engage adaptation in a diseased brain. One potent way is via transcranial neuromodulation, bypassing the afferents sensory channels.

Even in our personal experience, sometimes the 'magic' understanding with a dear person can get sick and we do not understand each other anymore. Which is the wisest advice in this case? TO LISTEN!

Aiming at developing proper neuromodulation interventions, I propose listening to the brain affected by a disease via proper neuroimaging techniques. Especially electro- and magneto-encephalography (EEG and MEG) give a direct access to the electrical neuronal activity we can modify via neuromodulation, transcranial electric stimulation (tES) in particular. I will present a novel way to couple with tES targets and indicate paths to build personalized curing interventions more efficiently.

BIO:

Franca Tecchio grew up in Milan in a work-lover environment, considered Rome her adoptive city, fascinated from the fatalistic and intuitive approach. Graduated in physics, she is senior staff researcher at the National Research Council (CNR), where she leads the Laboratory of Electrophysiology for Translational neuroScience (LET'S), active at Gemelli Hospital, after 18 years at Fatebenefratelli Hospital.

With magneto- and electro encephalo- and myo-graphy (MEG, EEG, EMG) and non-invasive neuromodulation techniques that modify neuronal electrical activity, Let's develops methods of brain complexity analysis and therapeutic interventions via precision Electroceuticals.

Among the 10 most active Italian researchers in Clinical Neurology on 'La Repubblica Salute' (2003), in 2016 she contributes to an article on neuromodulation in 'Il Venerdì di Repubblica', one of the most read weekly magazines in Italy. PI of 33 projects funded, Peer-Review for about 30 international journals, Expert evaluator of 18 European funding requests (including 1 ERC), Associate Editor of Restorative Neurology and Neuroscience (2012) and Frontiers in Physiology- Fractal and Network Physiology, Chairwoman in 10 and Speaker in 54 International congresses and 14 meetings for European projects. Director of studies of 6 Internship, 10 PhD and 14 Master students, Discussant 1 PhD student at Delft University, The Netherlands.