Concurrent transcranial magnetic stimulation and electroencephalography (TMS–EEG) has emerged as a powerful tool to non-invasively probe brain circuits in humans, allowing for the assessment of cortical excitability and connectivity. Emerging evidence has shown an enormous potential to develop TMS-EEG predictors and markers of treatments and of the pathophysiology of brain disorders. The talk will describe the technical and theoretical framework and the application of TMS-EEG to detect physiological and pathological brain states. Dr. Premoli will also show the recent use of the technique in first-in-human clinical trials to detect pharmacodynamic properties of newly developed drugs acting in the human brain.

**Tuesday, March 5, 2019**
**4:00pm**
**Semel Institute, Room 37–413 and 37–417**