



**University of  
Zurich** <sup>UZH</sup>

## Department of Economics – Neuroeconomics Seminar

**October 20, 2022 - 17:00 - 18:00**

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### **Brain dynamics and flexible behaviors**

Executive control processes and flexible behaviors rely on the integrity of, and dynamic interactions between, large-scale functional brain networks. The right insular cortex is a critical component of a salience/midcingulo-insular network that is thought to mediate interactions between brain networks involved in externally oriented (central executive/lateral frontoparietal network) and internally oriented (default mode/medial frontoparietal network) processes. How these brain systems reconfigure with development is a critical question for cognitive neuroscience, with implications for neurodevelopmental pathologies affecting brain connectivity. I will describe studies examining how brain network dynamics support flexible behaviors in typical and atypical development, presenting evidence suggesting a unique role for the dorsal anterior insular from studies of meta-analytic connectivity modeling, dynamic functional connectivity, and structural connectivity. These findings from adults, typically developing children, and children with autism suggest that structural and functional maturation of insular pathways is a critical component of the process by which human brain networks mature to support complex, flexible cognitive processes throughout the lifespan.