ENH SEMINAR SERIES

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Mirror neurons, motor commands and movements:

new insights into corticospinal function

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The concept of motor 'commands' in the motor control literature proposes that supraspinal structures generate movement by passing a 'command' to the spinal cord. Ideas about commands for movement have been strongly influenced by the fact that electrical stimulation of the motor cortex actually causes movement, but there are critical differences between evoked and natural movements. I will discuss the evidence for motor cortex pyramidal tract neurons acting as potential 'command neurons'. These pyramidal neurons exhibit some features that fit well with such a role, including some neurons intercalated in 'smart' transcortical reflexes and with fast, direct access to motoneurons. These features are discussed in the light of theories of motor control such as optimal feedback control and active inference. I will stress that activation of PTNs is not restricted to their role as 'command' neurons: their discharge can also show mirror properties, being modulated during observation of others' actions, without any sign of concomitant EMG activity.

Locations: *Seminar is simultaneously presented*

UPC: HNB 100 - Live **Hedco Neurosciences Building** UPC Campus Map/Directions: http://www.usc.edu/about/visit/upc/	**HSC: 147 – Video Conference** **Center for the Health Professional** HSC Campus Map/Directions: http://www.usc.edu/about/visit/hsc/

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