

Thursday, November 2nd, 1.30pm ET

Presentation in Zoom, accessible via the C-STAR website:

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Bilateral subthalamic nucleus neurons differently encode speech production vs. limb movement

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Deep brain stimulation (DBS) of the subthalamic nucleus (STN), which consistently improves limb motor functions, shows mixed effects on speech functions in Parkinson's disease (PD). One possible explanation for this discrepancy is that STN neurons may differentially encode speech and limb movement. Although STN neuronal activity was reported during speech production or limb movement, no previous study directly compared single and multi-unit neuronal activity during speech and limb movement within same patients. By leveraging intraoperative data collection during awake DBS surgery, we examined the firing pattern of STN neurons in response to speech production and limb movement in 11 non-demented PD patients. We isolated 69 single and multi-units within bilateral STN across patients. 41 Neurons were modulated by speech and limb movement tasks. Further analysis indicated a diverse pattern of firing rates for STN neurons. Moreover, there were neurons that selectively responded to speech, or limb movement. These data provide new insights into the role of STN neurons in speech and limb movement and have clinical implications.

The online lecture can be followed online from your computer, tablet or smartphone, in Zoom. The zoom link is accessible via the C-STAR website: <http://cstar.sc.edu/lecture-series/>

There will be a watch party in Discovery #140 on the USC Columbia campus

For more information, or to be added to the C-STAR mailing list, contact Dirk den Ouden:
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