

Distinguishing Dopamine's Numerous Contributions to Behavior

April 23

Tuesday, 12:30 pm

Billings Building—Rosedale Room

SPEAKER:



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Host: BNI Postdocs

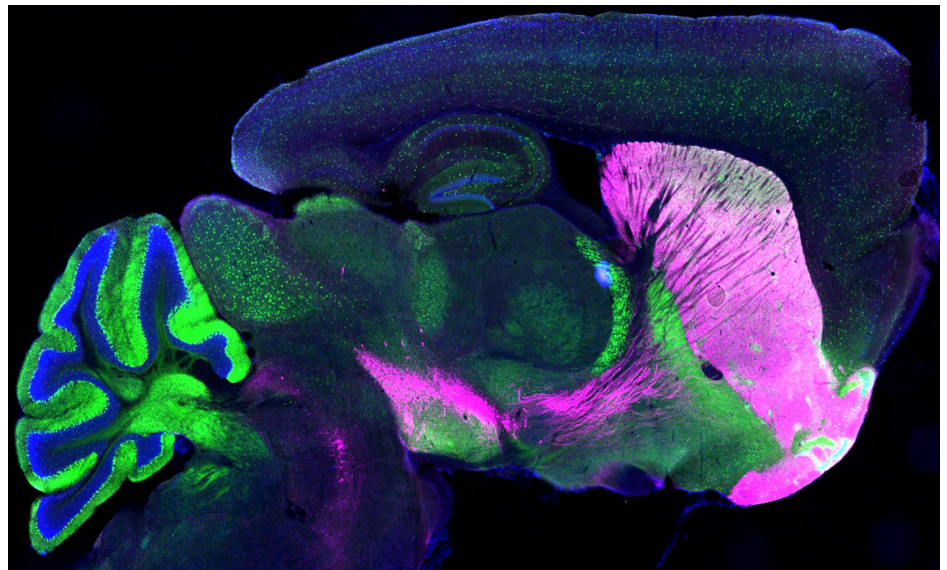
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Abstract

The basal ganglia (BG) are critical for the selection, execution and reinforcement of motor actions, and their dysfunction in humans is implicated in several neurological illnesses, including Parkinson's disease, Huntington's disease, dystonia, drug addiction, and obsessive-compulsive disorders; however, the precise mechanisms employed by the BG to influence habitual and goal-directed movements in health and disease remain poorly understood. The Tritsch laboratory seeks to address this gap in knowledge by better understanding how dopamine and acetylcholine—two key neuromodulators within the BG—modify neural activity and motor behavior in mice. In this talk, I will share our attempts at dissecting long-suspected influences that dopamine and acetylcholine exert on one another, and on delineating the role that dopamine plays in the production of vigorous motor actions.



Publications

1. Krok AC, Maltese M*, Mistry P*, Miao X, Li Y, Tritsch NX (2023) Intrinsic dopamine and acetylcholine dynamics in the striatum of mice. *Nature* 621:543–549
2. Liu H, Melani R, Sankaramanchi A, Zeng R, Maltese M, Martin JR, Tritsch NX. (2023) Dopamine plays a permissive role in the production of vigorous movements. *BioRxiv*.
3. Sippy T, Tritsch NX (2023) Unraveling the dynamics of dopamine release and its actions on target cells. *Trends Neurosci* 46(3):228-239