**PROJECT RESUME**

**TITLE**: Exploring short-term plasticity in dopamine release between anatomical compartments of nigrostriatal dopamine neurons

Nigrostriatal dopamine neurons form vast axonal arbours in the striatum, where dopamine release from these axons exhibits intrinsic short-term plasticity, governed by dopamine transporters. Dynamics in the somatodendritic compartment of these neurons, however, remains unexplored. This project aims to explore whether the somatodendritic compartment of dopamine neurons also exhibits short-term plasticity in release, and whether dopamine transporters regulate this plasticity. We will use a combination of fluorescent dopamine indicator imaging and pharmacology, in *ex vivo* mouse brain slices, to gain an understanding of how these dynamics may or may not differ between dopamine neuron compartments. These neurons degenerate in Parkinson’s disease, thus our understanding of these dynamics may give insight into what makes these neurons so vulnerable to neurodegeneration.

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