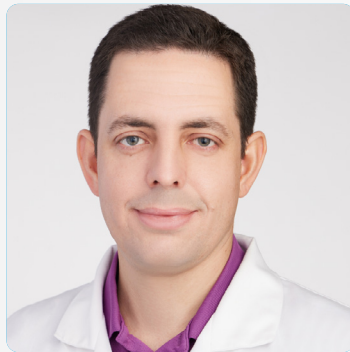


The Friedman Brain Institute

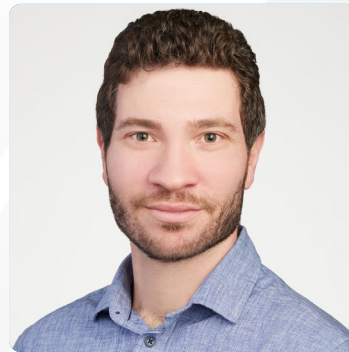
2025 FBI Research Scholars

On behalf of the Philanthropic Leadership Council of The Friedman Brain Institute, we are pleased to announce the 2025 recipients of The FBI Research Scholars Awards.

Nash Family Research Scholar Award



Chrystian Junqueira Alves, PhD
Assistant Professor, Neuroscience



Daniel da Silva, PhD, MSc
Assistant Professor, Neuroscience

Mechano-Electrical Regulation of Neurogenesis

Dysregulation of neuroprogenitor cells during brain development can cause disorders like autism and microcephaly. While transcription factors are well-studied, fundamental aspects like plasma membrane properties and cytoskeleton mechanics remain overlooked. This project explores how inner membrane surface charge influences neuroprogenitor cells differentiation and neuronal diversity during cortical development. Using voltage imaging, membrane fluorescent probes, and patch-clamp recordings, we aim to uncover how membrane charge dynamics impacts neurogenesis. We will test engineered molecular actuators that increase negative membrane charge and disrupts the cortical actin, potentially inducing neuronal lineage commitment. Results will provide insights into cortical layer formation and inform future therapies for neurodevelopmental disorders.



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