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Research Interests

My research focuses on the regulation and function of the cortical cholinergic input system. This neuronal system innervates all cortical areas and layers, and it is a critical component of the neuronal circuitry that mediates attentional functions and capacities. Part of our research focuses on the regulation of cortical cholinergic inputs by afferent circuits, and on the role of these neuronal systems in the manifestation of the symptoms of schizophrenia and other neuropsychiatric disorders. A related research avenue concerns the interactions between developmental aberrations in the organization and function of cortical cholinergic inputs and age-related changes in attentional capacities. Our research utilizes sophisticated behavioral methods for the assessment of attentional functions in laboratory animals, in vivo microdialysis and enzyme-selective microelectrodes for the measurement of transmitter release in task-performing animals, in vivo amperometric measures of choline clearance, and neurochemical methods for the characterization of choline transporter functions.

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