



SPRING 2026 SEMINAR SERIES

“Astrocytes in Neurocognitive Function and Dementia Pathogenesis”

Astrocytes influence neuronal function and behavior and may contribute to neurodegenerative disorders, but their exact roles are not clear. We investigate the effects of astrocytic receptor dysregulation and proteinopathy by leveraging in vivo gene editing, chemogenetics, and viral vector-based approaches together with behavioral, physiological, and molecular analyses.

Our studies reveal that astrocytic receptors have sex-dimorphic effects on spatial memory, suggesting that sex-dependent tuning in astrocytic signaling is essential for normal cognitive function. Moreover, in disease models, astrocytes have maladaptive changes in specific neuroimmune and metabolic pathways that ultimately disrupt neuronal function. Our research suggests that astrocytes have precise and context-dependent alterations in dementia pathology.

Based on this work and other studies, we propose that astrocytes contribute to selective vulnerability in dementia through maladaptive transitions to context-divergent phenotypes that impair specific brain regions and functions. Preventing cognitive decline may require precision-driven therapeutics that target astrocytic function in vulnerable circuits to enhance disease resilience.



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Date:

Thursday, January 15, 2026

Time:

12:00 p.m. to 1:00 p.m.

Location:

ASRC — 1st Floor I Auditorium
85 Saint Nicholas Terrace
New York, NY 10031

Host:

Pinar Ayata, PhD

Zoom:



Meeting ID: 869 8476 8406
Passcode: 743619

[Meeting Link](#)