

Astrocytes as Context-Specific Regulators of Memory in Health and Disease

December 13

Tuesday, 12:30pm

Hybrid: Rosedale Room and Zoom

For Researchers



Speaker:

Anna G. Orr, Ph.D.

Nan and Stephen Swid Assistant Professor of Frontotemporal Dementia Research and Assistant Professor of Neuroscience

Helen and Robert Appel Alzheimer's Disease Research Institute and the Center for Neurogenetics Feil Family Brain and Mind Research Institute

Weill Cornell Medicine

Host: Rajiv R. Ratan, M.D., Ph.D.

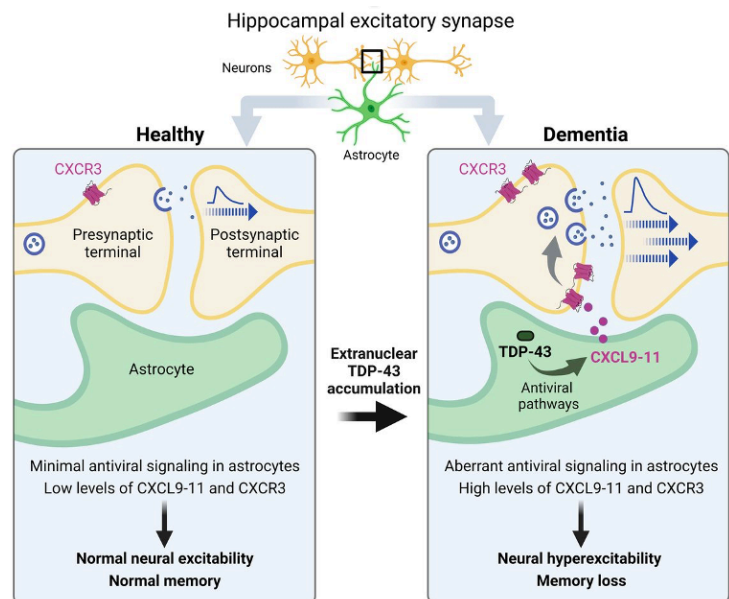
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Abstract

Dr. Anna Orr will discuss emerging studies showing that astrocytes are context-dependent regulators of behavior and cognitive function, including spatial memory. These studies suggest that aberrant changes in astrocytic signaling in aging or disease promote selective and sex-specific neural deficits and represent novel therapeutic targets for various CNS disorders. Dr. Orr will also highlight new findings that astrocytic proteinopathy associated with dementia can induce memory loss through selective changes in astrocytic neuroimmune pathways and synaptic functions. Together, these studies are redefining astrocytes as precise neural modulators in health and disease.



1. Orr AG, Hsiao EC, Wang MM, Ho K, Kim DH, Wang X, Guo W, Kang J, Yu GQ, Adame A, Devidze N, Dubal DB, Masliah E, Conklin BR, Mucke L. **Astrocytic adenosine receptor A2A and Gs-coupled signaling regulate memory.** *Nat Neurosci* 2015 Mar; 18(3):423-34.
2. Licht-Murava A, Meadows SM, Palaguachi F, Song SC, Bram Y, Zhou C, Jackvony S, Schwartz RE, Froemke RC, Orr AL, Orr AG. **Astrocytic TDP-43 dysregulation impairs memory by modulating antiviral pathways and interferon-inducible chemokines.** *BioRxiv* Aug 30, 2022; 503668. In revision.
3. Meadows SM, Palaguachi F, Licht-Murava A, Barnett D, Zimmer TS, Zhou C, McDonough SR, Orr AL, Orr AG. **Astrocytes regulate spatial memory in a sex-specific manner.** *BioRxiv* Nov 3, 2022; 511881. Submitted.

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