

Weekly Colloquium

Tuesday, 5/30/2017, 12:30pm, Billings Building – Rosedale Conference Room

"Chromatin to Cognition: The Epigenetic Basis of Normal Cognitive Aging"

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Research Abstract

Our laboratory has been interested in understanding the molecular underpinnings of normal cognitive aging. Normal cognitive aging, hallmarked by structural preservation, represents a significant compromise of the dynamic mechanisms of learning-related plasticity. One of these dynamic mechanisms appears to be epigenetic modification. We have evaluated the role of post-translational epigenetic modifications as well as epigenome-modifying enzyme regulation in relation to learning and memory in a rodent model of normal cognitive aging. Our results to date speak to nuanced epigenetic control of learning and memory in an experience-dependent manner.

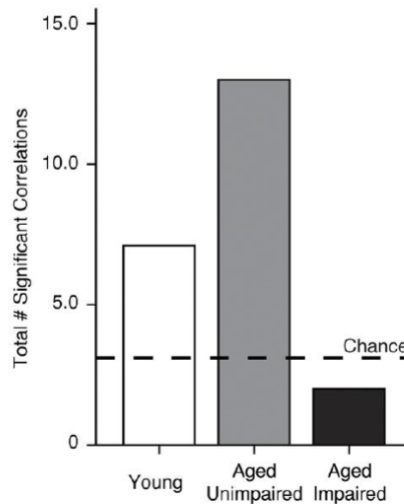
Recent Publications:

Castellano JF, Fletcher BR, Kelley-Bell B, Kim DH, Gallagher M, et al. (2012) *Age-related memory impairment is associated with disrupted multivariate epigenetic coordination in the hippocampus*. PLoS ONE 7(3): e33249. doi:10.1371/journal.pone.0033249

Castellano JF, Fletcher BR, Patzke H, Long JM, Sewal AS, Kim DH, Kelley-Bell B, Rapp PR. (2014) *Reassessing the effects of histone deacetylase inhibitors on hippocampal memory and cognitive aging*. Hippocampus 24: 1006-1016.

Sewal AS, Patzke H, Perez EJ, Park P, Lehmann E, Zhang Y, Becker G, Fletcher BR, Long JM, Rapp PR. *Experience Modulates the Effects of Histone Deacetylase Inhibitors on Gene and Protein Expression in the Hippocampus: Impaired Plasticity in Aging*. J Neurosci 35(33) 11729-42

Figure 4. Total number of significant epigenetic/spatial memory correlations for Y, AU, and AI rats.



Castellano JF, Fletcher BR, Kelley-Bell B, Kim DH, Gallagher M, et al. (2012) *Age-Related Memory Impairment Is Associated with Disrupted Multivariate Epigenetic Coordination in the Hippocampus*. PLoS ONE 7(3): e33249. <https://doi.org/10.1371/journal.pone.0033249> <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0033249>