

➤ **Sunday November 4th, 9:30 a.m. – 12:30 p.m.**

Genetic Control of Gene Expression in Hippocampus, Striatum, Cerebellum, and Eye

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Abstract:

Gene expression levels are highly variable among different, but normal, strains of mice. For example, in a microarray study of hippocampal gene expression based on replicate assays from 99 strains, expression of the last exon of the NMDA 2B receptor (Grin2b or NR2B) varied more than 5-fold.

Steady-state expression of neuronatin (Nnt), myelin basic protein (Mbp), three myelin-associated genes (Mbp, Mobp, and Plp1), and A beta polypeptide (App) varied more than 10-fold! The obvious follow-up question is the degree of covariation of groups of functionally related transcripts. Do levels of Mbp, Mobp, and Plp1 covary? What transcripts have high expression when App has high expression or low expression when Grin2b has low expression?

In this INCF-sponsored mini-workshop, we will describe how these types of questions can be systematically addressed using several massive microarray data sets that are built into GeneNetwork. We will illustrate how covariation of gene expression can be used as a fundamental tool to assemble elaborate networks of transcripts and how to combine these expression networks with corresponding data on cell populations, disease susceptibility, and behavior in the same strains of mice.