Bio

ACADEMIC APPOINTMENTS
• Instructor, Neurosurgery

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS
Aaron Milstein studies how dynamic synapses, neuronal cellular diversity, network connectivity, and plasticity mediate learning and memory. He trained with Roger Nicoll, Jeff Magee, and Sandro Romani, employing electrophysiology, optogenetics, pharmacology, and computational modeling to investigate information processing in neuronal circuits. Currently Aaron uses modern parallel computing methods to simulate spatial memory encoding in the hippocampus and its disfunction in epilepsy.

Publications

PUBLICATIONS
• Persistent Sodium Current Mediates the Steep Voltage Dependence of Spatial Coding in Hippocampal Pyramidal Neurons. Neuron
  Hsu, C., Zhao, X., Milstein, A. D., Spruston, N.
  2018

• Inhibitory suppression of heterogeneously tuned excitation enhances spatial coding in CA1 place cells. Nature neuroscience
  Grienberger, C., Milstein, A. D., Bittner, K. C., Romani, S., Magee, J. C.
  2017; 20 (3): 417-426

• Behavioral time scale synaptic plasticity underlies CA1 place fields. Science (New York, N.Y.)
  Bittner, K. C., Milstein, A. D., Grienberger, C., Romani, S., Magee, J. C.
  2017; 357 (6355): 1033–36

• Hippocampal Dentate Mossy Cells Improve Their CV and Trk into the Limelight. Neuron
  Milstein, A. D., Soltesz, I.
  2017; 95 (4): 732–34

• Axonal Filtering Allows Reliable Output during Dendritic Plateau-Driven Complex Spiking in CA1 Neurons NEURON
  Apostolides, P. F., Milstein, A. D., Grienberger, C., Bittner, K. C., Magee, J. C.
  2016; 89 (4): 770-783

• Inhibitory Gating of Input Comparison in the CA1 Microcircuit NEURON
  2015; 87 (6): 1274-1289

• Conjunctive input processing drives feature selectivity in hippocampal CA1 neurons NATURE NEUROSCIENCE


