1093-60-299 **Samuel F Feng*** (sffeng@math.princeton.edu). *The neural dynamics of (almost) optimal decisions.* Preliminary report.

Moment by moment, we make decisions which involve both difficult deadlines and noisy information. How do we do this? How do our brains formulate decisions and actions based on prior experience, poor data, and time pressure? Furthermore, how do the dynamics of ≈100 billion neurons reflect the underlying computations which result in almost optimal behavior? In this talk, I will describe the mathematical models, psychophysical experiments, and neurophysiological discoveries which have illuminated neural mechanisms responsible for some simple decision making scenarios. The remainder of the talk will focus on some recent modeling work and results further some experimentally observed behaviors. In particular, we will propose that modeling evidence accumulation with a Lévy process produces good fits to experimental data, compared to other popular reaction time models. Furthermore, by using such stochastic processes, we give another account for why humans behave almost optimally in certain simple decision making situations.

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