1135-92-2430 **Khanh P Nguyen*** (kpnguyen21@yahoo.com), 12218 North Palm Lake Dr., Houston, TX 77034, and **Kresimir Josic** and **Zachary Kilpatrick**. *Intertrial correlations in sequential decision-making tasks.* Preliminary report.

Nearly all organisms accumulate evidence to make decisions, in order to survive in their environment. Understanding the mechanism behind these decisions is a focus of current efforts in experimental and theoretical neuroscience. Drift-diffusion models are commonly used to study decision making because they are mathematically tractable, provide a good description of experimentally observed behavior, as well as the underlying neural activity. Most mathematical studies of decision-making have focused on idealized situations, such as static environments or cases where a subjects' decisions and actions have no impact on the environment. In reality, the environment can change in response to the actions that organisms make. In this paper, we extended the classic modeling framework to include spontaneous and action-induced environmental changes. We have modeled spontaneous changes as stochastic switches in the correct choice from trial to trial. A fixed threshold fixes the correct percentage across trials, and we conjecture that the threshold should be dynamically increased to maximize the reward rate. This more realistic model can help us understand the neural computations underlying decisions, and identify the biophysical mechanisms that make such computations possible. (Received September 26, 2017)