I worked with Dr. Joseph Kable at the Cognitive Neuroscience Initiative (CNI) on a research paper that explores the link between physiological arousal and environmental uncertainty. The paper is comprised of many experiments to test the hypothesis, which is that the nervous system approximates a form of Bayesian inference, and that what appears to be noisy behavior can be a reflection of high-level inference responding to the arrival of new information. The experiment I focused on was an audio task in which subjects are given a sound to either the left or right ear, and are asked to predict from which side the sound will come on the next trial for a thousand trials. Probabilities of whether the sound will come from the left or right varied in each session by block. For instance, subjects might hear 90% of sounds from one side, while on another block they are just as likely to hear the left as the right. The certain/uncertain conditions are created through these different probabilities (hazard rates) and subjects’ physiological data is collected. Pupil data was collected because it is a correlate of activity in the locus coeruleus, a brain region thought to be active in making harder decisions. We found that changes in hazard rate was accompanied by pupil dilation, and that when subjects adjusted to a new hazard rate, pupil dilation diminished. I learned how to be an independent research unit. Solving problems as they come up with collaboration and creativity was a learning experience. I am glad I had this summer to have this experience.