

First Annual Rutgers Brain Health Institute Symposium

Post-doc and Graduate Student Poster Presentation

Title of Abstract
A multi-method approach towards understanding the mechanisms of primate vision
Authors (<i>underline name of presenter</i>)
<u>Kohitij Kar</u> , Yinghua Liu, Alexander Schielke, Jeroen Joukes, Steffen Klingenhoefer, Jacob Duijnhouwer, Jasmine Siegel, Anne McCormick, Melanie Arroyave, and Bart Krekelberg
PI Name
Bart Krekelberg
Abstract
<p>The laboratory's long term goal is to understand how the brain manages to make sense of its complex visual environment. How are the photons that hit the retina translated into meaningful information about where things are, where they are going, and what they look like?</p> <p>We study this complex process by combining computational modeling and multiple experimental techniques: human psychophysics provides information at an abstract level; it tells us something about what humans do and sometimes it can provide constraints on how they do it. Functional magnetic resonance imaging can tell us something about the particular areas of the brain that are involved. To study the mechanisms, however, one also needs to have a detailed look at the neurons that do all this hard work. This is possible with electrophysiological methods in animals. The connection from the mechanistic single-cell knowledge to the high-level perceptual understanding can be made in monkeys that are performing psychophysical tasks while we record from relevant cells in their brains. Because we not only want to understand the brain, but also improve it, or fix it when it malfunctions, we also study noninvasive methods of neuromodulation such as transcranial current stimulation in humans and monkeys.</p>
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