

RETINOTOPIC MAPPING: FABRICATION, METHODS, AND THEORY. *Jeff Meade, M. Helguera*, D. Bavelier, A. Guidon, R. Achtman. Center for Imaging Science, RIT, and Rochester Center for Brain Imaging, UofR jtm6156@rit.edu.*

Retinotopic mapping is an important technique used in studies of the visual cortex. Historically, retinotopic maps were performed by attaching electrodes to monkey brains and measuring electrical activity when visual stimuli were presented. Nowadays with the use of fMRI we can perform retinotopic mapping on humans *in vivo*. The amount of information acquired during an MR scan can be overwhelming and computers are needed to assemble it all and create a map. There are many software packages available that perform this task and no two are exactly the same. An important step in creating a retinotopic map is to segment brain tissue into white matter, grey matter, and cerebrospinal fluid from an anatomical MR scan. This research project has two goals: 1) to investigate the theory and methods of creating a retinotopic map paying most attention to brain matter segmentation; 2) to create a retinotopic map for further analysis and research. Software suites mrVISTA and FSL will be used to allow for the comparison of different algorithms based on the results.