<html> <html xmlns=“http://www.w3.org/1999/xhtml”><head><meta http-equiv=“Content-Type” content=“text/html; charset=UTF-8”><title>Zotero Report</title><link rel=“stylesheet” type=“text/css” href=“Zotero%20Report_retinotopy_reviews_files/detail.css”><link rel=“stylesheet” type=“text/css” media=“screen,projection” href=“Zotero%20Report_retinotopy_reviews_files/detail_screen.css”><link rel=“stylesheet” type=“text/css” media=“print” href=“Zotero%20Report_retinotopy_reviews_files/detail_print.css”></head><body><ul class=“report combineChildItems”><li id=“item-18396” class=“item journalArticle”><h2>Functional anatomy of macaque striate cortex. II. Retinotopic organization</h2><table><tbody><tr class=“creator author”><th class=“author”>Author</th><td>R B Tootell</td></tr><tr class=“creator author”><th class=“author”>Author</th><td>E Switkes</td></tr><tr class=“creator author”><th class=“author”>Author</th><td>M S Silverman</td></tr><tr class=“creator author”><th class=“author”>Author</th><td>S L Hamilton</td></tr><tr class=“volume”><th class=“volume”>Volume</th><td>8</td></tr><tr class=“issue”><th class=“issue”>Issue</th><td>5</td></tr><tr class=“pages”><th class=“pages”>Pages</th><td>1531-1568</td></tr><tr class=“publicationTitle”><th class=“publicationTitle”>Publication</th><td>The Journal of neuroscience: the official journal of the Society for Neuroscience</td></tr><tr class=“date”><th class=“date”>Date</th><td>May 1988</td></tr><tr class=“abstractNote”><th class=“abstractNote”>Abstract</th><td>Macaque monkeys were shown retinotopically-specific visual stimuli during 14C-2-deoxy-d-glucose (DG) infusion in a study of the retinotopic organization of primary visual cortex (V1). In the central half of V1, the cortical magnification was found to be greater along the vertical than along the horizontal meridian, and overall magnification factors appeared to be scaled proportionate to brain size across different species. The cortical magnification factor (CMF) was found to reach a maximum of about 15 mm/deg at the representation of the fovea, at a point of acute curvature in the V1-V2 border. We find neither a duplication nor an overrepresentation of the vertical meridian. The magnification factor did not appear to be doubled in a direction perpendicular to the ocular dominance strips; it may not be increased at all. The DG borders in parvorecipient layer 4Cb were found to be as sharp as 140 micron (half-amplitude, half width), corresponding to a visual angle of less than 2' of arc at the eccentricity measured. In other layers (including magnorecipient layer 4Ca), the retinotopic borders are broader. The retinotopic spread of activity is greater when produced by a low-spatial-frequency grating than when produced by a high-spatial-frequency grating. Orientation-specific stimuli produced a pattern of activation that spread further than 1 mm across cortex in some layers. Some DG evidence suggests that the spread of functional activity is greater near the foveal representation than near 5 degrees eccentricity.</td></tr></tbody></table>
<li id=“item-6537” class=“item journalArticle”><h2>Extended Concepts of Occipital Retinotopy</h2><table><tbody><tr class=“creator author”><th class=“author”>Author</th><td>Christopher W. Tyler</td></tr><tr class=“creator author”><th class=“author”>Author</th><td>Lora T. Likova</td></tr><tr class=“creator author”><th class=“author”>Author</th><td>Chien-Chung Chen</td></tr><tr class=“creator author”><th class=“author”>Author</th><td>Leonid L. Kontsevich</td></tr><tr class=“creator author”><th class=“author”>Author</th><td>Mark M. Schira</td></tr><tr class=“creator author”><th class=“author”>Author</th><td>Alex R. Wade</td></tr><tr class=“volume”><th class=“volume”>Volume</th><td>1</td></tr><tr class=“pages”><th class=“pages”>Pages</th><td>319-329</td></tr><tr class=“publicationTitle”><th class=“publicationTitle”>Publication</th><td>Current Medical Imaging Reviews</td></tr><tr class=“date”><th class=“date”>Date</th><td>November 2005</td></tr><tr class=“DOI”><th

class=“DOI”>DOI</th><td>10.2174/157340505774574772</td></tr><tr class=“abstractNote”><th class=“abstractNote”>Abstract</th><td>Retinotopic mapping is a key property of organization of occipital cortex, predominantly on the medial surface but increasingly being identified in lateral and ventral regions. The retinotopic organization of early visual areas V1-3 is well established, although anatomical landmarks can help to resolve ambiguities in poorly-defined functional maps. New morphing techniques are now available to define the metric mappings quantitatively within each retinotopic area. In the dorsal occipital regions, there is fair agreement that area V3A should be split into separate V3A and V3B maps, and that beyond them lies a further area, V7. We specify the eccentricity mapping of both V3B and V7 for the first time, showing how the latter is roughly parallel to the meridional mapping and offering formal accounts of such paradoxical behavior. In ventral occipital cortex, we support the analysis of Zeki and Bartels [1] and Wade et al. [2] that V4 maps the full hemifield, and show the existence of two more areas, a ventromedial map of the lower quadrant, emphasizing the upper vertical meridian, and an adjacent area with a dominant foveal representation. In lateral cortex, the motion area defined by a motion localizer shows pronounced retinotopy, particularly in the eccentricity parameter. A dorsolateral map between the motion area and V3B, which represents the lower quadrant with an emphasis the foveal part of the lower vertical meridian, may be a counterpart to the ventromedial map.</td></tr></tbody></table>
<li id=“item-5636” class=“item journalArticle”><h2>Imaging retinotopic maps in the human brain</h2><table><tbody><tr class=“creator author”><th class=“author”>Author</th><td>Brian A. Wandell</td></tr><tr class=“creator author”><th class=“author”>Author</th><td>Jonathan Winawer</td></tr><tr class=“url”><th class=“url”>URL</th><td>http://www.sciencedirect.com/science/article/B6T0W-50PVFVV-2/2/bc2432011e90ba449229081d411be736</td></tr><tr class=“volume”><th class=“volume”>Volume</th><td>51</td></tr><tr class=“issue”><th class=“issue”>Issue</th><td>7</td></tr><tr class=“pages”><th class=“pages”>Pages</th><td>718-737</td></tr><tr class=“publicationTitle”><th class=“publicationTitle”>Publication</th><td>Vision Research</td></tr><tr class=“date”><th class=“date”>Date</th><td>April 13, 2011</td></tr><tr class=“DOI”><th class=“DOI”>DOI</th><td>10.1016/j.visres.2010.08.004</td></tr><tr class=“abstractNote”><th class=“abstractNote”>Abstract</th><td><p>
A quarter-century ago visual neuroscientists had little information about the number and organization of retinotopic maps in human visual cortex. The advent of functional magnetic resonance imaging (MRI), a non-invasive, spatially-resolved technique for measuring brain activity, provided a wealth of data about human retinotopic maps. Just as there are differences amongst non-human primate maps, the human maps have their own unique properties. Many human maps can be measured reliably in individual subjects during experimental sessions lasting less than an hour. The efficiency of the measurements and the relatively large amplitude of functional MRI signals in visual cortex make it possible to develop quantitative models of functional responses within specific maps in individual subjects. During this last quarter-century, there has also been significant progress in measuring properties of the human brain at a range of length and time scales, including white matter pathways, macroscopic properties of gray and white matter, and cellular and molecular tissue properties. We hope the next 25 years will see a great deal of work that aims to integrate these data by modeling the network of visual signals. We do not* *know what such theories will look like, but the characterization of human retinotopic maps from the last 25 years is likely to be an important part of future ideas about visual computations.</p></td></tr></tbody></table>
<li id="item-10332" class="item journalArticle"><h2>Visual Field Maps in Human Cortex</h2><table><tbody><tr class="creator author"><th class="author">Author</th><td>Brian A. Wandell</td></tr><tr class="creator author"><th class="author">Author</th><td>Serge O. Dumoulin</td></tr><tr class="creator author"><th class="author">Author</th><td>Alyssa A. Brewer</td></tr><tr class="url"><th class="url">URL</th><td>http://www.sciencedirect.com/science/article/pii/S089662730700774X</td></tr><tr class="volume"><th class="volume">Volume</th><td>56</td></tr><tr class="issue"><th class="issue">Issue</th><td>2</td></tr><tr class="pages"><th class="pages">Pages</th><td>366-383</td></tr><tr class="publicationTitle"><th class="publicationTitle">Publication</th><td>Neuron</td></tr><tr class="date"><th class="date">Date</th><td>October 25, 2007</td></tr><tr class="DOI"><th class="DOI">DOI</th><td>10.1016/j.neuron.2007.10.012</td></tr><tr class="abstractNote"><th class="abstractNote">Abstract</th><td>Summary

Much of the visual cortex is organized into visual field maps: nearby neurons have receptive fields at nearby locations in the image. Mammalian species generally have multiple visual field maps with each species having similar, but not identical, maps. The introduction of functional magnetic resonance imaging made it possible to identify visual field maps in human cortex, including several near (1) medial occipital (V1,V2,V3), (2) lateral occipital (LO-1,LO-2, hMT+), (3) ventral occipital (hV4, VO-1, VO-2), (4) dorsal occipital (V3A, V3B), and (5) posterior parietal cortex (IPS-0 to IPS-4). Evidence is accumulating for additional maps, including some in the frontal lobe. Cortical maps are arranged into clusters in which several maps have parallel eccentricity representations, while the angular representations within a cluster alternate in visual field sign. Visual field maps have been linked to functional and perceptual properties of the visual system at various spatial scales, ranging from the level of individual maps to map clusters to dorsal-ventral streams. We survey recent measurements of human visual field maps, describe hypotheses about the function and relationships between maps, and consider methods to improve map measurements and characterize the response properties of neurons comprising these maps.</td></tr></tbody></table>
</body></html>