

**Recording, analyzing,
manipulating, and modeling
whole brain activity**

Maps of neuronal activation

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Jack Waters
Associate Investigator

ALLEN INSTITUTE for
BRAIN SCIENCE

Maps of mouse visual cortex

Mismatch between architectonic and functional boundaries.

How similar is the map of mouse visual cortex to maps in primates?

How do cortical areas differ between mice: size, shape and location?

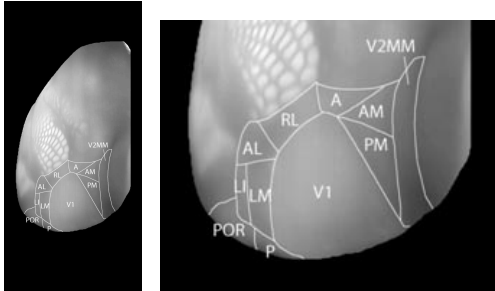
3P excitation

Single-cell resolution in densely-labeled tissue.

Spine resolution through scattering layers.

Maps of mouse visual cortex

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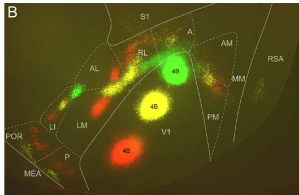


Allen Reference Atlas

Maps of mouse visual cortex

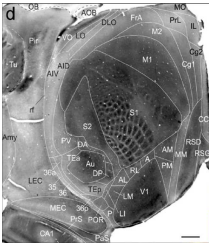
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B



Fluorescent anterograde tracers.
Anatomical retinotopy.
Wang & Burkhalter, 2007

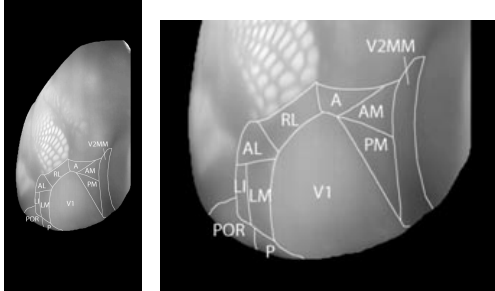
d



Cytochrome oxidase.
Chemoarchitectonic borders.
Wang, Sporns & Burkhalter, 2011

Maps of mouse visual cortex

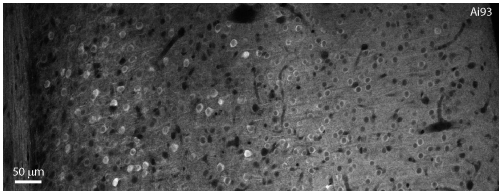
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How accurately do functional borders match anatomical borders?

GCaMP6 mice

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Emx1-IRES-Cre

Ai95
Ai96
Ai93

ROSA-CAG-GCaMP6f
ROSA-CAG-GCaMP6s
TITL-CaMK2a-GCaMP6f
CaMK2a-tTA

