lab meeting archive

**May 2018**
- 7: VSS prep - Billy
- 14: TBA

**April 2018**
- 2: TBA
- 9: TBA
- 16: VSS prep - Jing
- 23: VSS prep - Noah, Eline (maybe Billy)
- 30: Cancelled (Jon out of town)

**March 2018**
- 5: Catch up
- 12: Spring break - No labmeeting
- 19: Practice elevator pitches & Eline discusses PRF differences with polar angles and kids
- 26: Serra & Jing: Repetition suppression and adaptation

**Previous years**

**2017**

**Jan 2017**
- 9: Noah, Cortical Magnification
- 17: (Tuesday, due to MLK day on Monday) Serra, Cortical reinstatement during memory retrieval
- 23: Jon: Vistasoft Code Review
- 30: Jing & Silvia (modeling temporal psychophysics data)

**2016**

**December, 2016**
- 19: Jon: Gamma and Alzheimers

**November, 2016**
- 7: Barrie Klein: High-resolution retinotopic maps estimated with magnetoencephalography
- 14: SFN. No meeting
- 21: Open.

**October, 2016**
- 17: 11:15 Standard Cortical Observer Model Demo
- 24: 11:15 (Tentative) Metamers and Standard Cortical Observer Model
- 31: 11:15 SFN Prep

**July, 2016**
- 4: None
- 11: Jingyang on Temporal pRFs
- 18: Tamar Regev
- 25: Noah Templates

**May, 2016**
- 13: VSS
April, 2016
6: (WEDNESDAY, 11 AM): Joint meeting with Carrasco lab, Jason Samaha visiting. https://postlab.psych.wisc.edu/people/central/jason-samaha/
15: Break / no meeting
22: Eline: MEG denoise
29:

March, 2016
4: Software and infrastructure
11: Eline: Binocular rivalry and Gamma Oscillations
18: Jon onEBS & Noah: Docker Tutorial
25: Nicholas on MEG and Gamma, Silvia on Temporal integration

February, 2016
19: Jon: (1) EBS paper with Parvizi; Dora, Jon: ENeuro letter on shape of power spectrum
26: Noah on MEG head models

2015

November, 2015
4: Catch up on lab projects, lab web site
11: Noah: update on retinotopic atlas project
25: Dora: Discuss Voytek paper

September, 2015
Wednesday, Sep 9, 10:30: Jing Zhou on temporal population receptive fields in fMRI
Wednesday, Sep 16, 10:30: SFN Prep:
1. Noah: An automated tool for parcellating human visual cortex in individual subjects based on functional imaging data
2. Eline, Nicholas: Stimulus selectivity of gamma oscillations in human visual cortex measured with magnetoencephalography
3. Dora, Mai, Jon: Neural synchrony and the relationship between the BOLD response and the Local Field Potential

August, 2015
5: Noah Individual templates update
12: Catherine: texture updates

July, 2015
1: No meeting
8: Meeting on data structures, code, and various kinds of book-keeping in order to best coordinate joint projects
29: temporal integration update (Jing)

June, 2015
3: Make alabwebsite
10: General lab update
17: Shared lab meeting with Clay Curtis' lab (Spatial mapping in FEF in monkeys and humans)
27: No meeting

May, 2015
6: VSS prep (Mai's talk)
13: VSS prep (Catherine's poster, Eline's talk, Noah's poster, Mai's talk)
20: No meeting (VSS)
27: VSS review

April, 2015
1: 8:
February, 2015


11: Lab infrastructure, computing, and code (these topics will probably span multiple weeks)
   (1) Storing human brain data and subject codes (Hopefully we are all doing this the same way and it will just take a minute or two)
   (2) Our local freesurfer directories
   (3) Noah’s recent work on MNE and source localization of MEG (this is more content based)
   (4) Vistasoft code and how we represent meshes and interface with other software tools like Freesurfer, MRTOOLS, etc (also content based, and potentially complicated)
   (5) Our wiki page
   (6) meg_utilsgithubrepositoriy
   (7) general documentation of projects via wiki pages, readme’s on server, and so forth.
   (8) Github organization
   (9) Lab webpage
   (10) HPC

18: Continue Feb 11 discussion on infrastructure

25: No Meeting

2014

Mondays, 3:30 pm, Meyer 957 conference table (unless otherwise noted)

December, 2014

1: MEG gamma. Nicholas and Eline

November, 2014

3: No Meeting

10: MEG gamma?

17: SFN (no meeting)

24: Paper discussion


The brain continuously adapts its processing machinery to behavioural demands. To achieve this, it rapidly modulates the operating mode of cortical circuits, controlling the way that information is transformed and routed. This article will focus on two experimental approaches by which the control of cortical information processing has been investigated: the study of state-dependent cortical processing in rodents and attention in the primate visual system. Both processes involve a modulation of low-frequency activity fluctuations and spiking correlation, and are mediated by common receptor systems. We suggest that selective attention involves processes that are similar to state change, and that operate at a local columnar level to enhance the representation of otherwise non-salient features while suppressing internally generated activity patterns.

October, 2014

6: No meeting
**14:** (Tuesday, with Carrasco lab) **Discussion**

**Attraction of Position Preference by Spatial Attention throughout Human Visual Cortex.**
Klein BP1, Harvey BM1, Dumoulin SO2.

20: No meeting


**September, 2014**

1: No meeting (Labor Day)

8: No meeting (Logothetis talk at NYU Med school)


**Abstract.** One of the main functions of vision is to estimate the 3D shape of objects in our environment. Many different visual cues, such as stereopsis, motion parallax, and shading, are thought to be involved. One important cue that remains poorly understood comes from surface texture markings. When a textured surface is slanted in 3D relative to the observer, the surface patterns appear compressed in the retinal image, providing potentially important information about 3D shape. What is not known, however, is how the brain actually measures this information from the retinal image. Here, we explain how the key information could be extracted by populations of cells tuned to different orientations and spatial frequencies, like those found in the primary visual cortex. To test this theory, we created stimuli that selectively stimulate such cell populations, by "smearing" (filtering) images of 2D random noise into specific oriented patterns. We find that the resulting patterns appear vividly 3D, and that increasing the strength of the orientation signals progressively increases the sense of 3D shape, even though the filtering we apply is physically inconsistent with what would occur with a real object. This finding suggests we have isolated key mechanisms used by the brain to estimate shape from texture. Crucially, we also find that adapting the visual system's orientation detectors to orthogonal patterns causes unoriented random noise to look like a specific 3D shape. Together these findings demonstrate a crucial role of orientation detectors in the perception of 3D shape.

22:

**August, 2014**

4: Mai, Nathan, and Jon on Signal Detection, TPJ, and fMRI

11: Review figures for MEG Denoising project


**July, 2014**

7: two topics (time permitting)

- Jon on hV4 paper for the journal of visualized experiments: **Identification of the ventral occipital visual field maps in the human brain**
- Discussion: Rescuing US biomedical research from its systemic flaws (http://www.pnas.org/content/111/16/5773) PNAS-2014-Alberts-5773-7.pdf

14: Eline on visual attention and MEG

21: Jon in Japan (APCV)

28: Discussion: **Representational dynamics of object vision: The first 1000 ms**
http://www.journalofvision.org/content/13/10/1.long

**June, 2014**

2: Kendrick Kay, informal reporting of brand new project on modeling BOLD responses to word stimuli

9: Watch and discuss Jim DiCarlo's VSS talk: http://artsci.wustl.edu/~kkay/VSS14/

16: Dora, Mai, Jon on ECoG / BOLD correlations in visual cortex

23: Angie Voyles, on infant macaque EEG and psychophysics

30: Jon: Brain stimulation and ECoG