



2019

Kavli Summer Institute in Cognitive Neuroscience

Week 1: Intersections Between Neural Representations and Network Models

Course Directors

Dani Bassett
University of Pennsylvania

Jörn Diedrichsen
University of Western Ontario

Understanding cognitive processes requires both an understanding of the encoding of information within the brain and the transmission of that information across potentially spatially distributed areas. Recent tools have emerged to address each of these components separately: for example at the large scale, representational similarity analysis, multivoxel pattern analysis, and similar techniques seek to capture information encoding, while network models and graph-based techniques seek to capture information transmission. Yet, little work has sought to formally link these two approaches. In this week, we will have experts from both subfields speak about the cutting edge work in their area, current frontiers, and their thoughts on the integration between the two subfields. Fellows are invited to not only learn about models for encoding and transmission, but also work with the faculty to develop approaches at their intersection.

Tentative Schedule 2/26/19 (watch for updates)

Monday (6/24): Intersections between Representations and Networks

8:00-8:30	Breakfast
8:30-8:35	Welcome – Giesbrecht, Miller and Gazzaniga
8:35-8:45	Introductory Remarks – Dani Bassett and Jörn Diedrichsen
8:45-10:15	Speaker 1: Jörn Diedrichsen , University of Western Ontario
10:15-10:30	Break
10:30-11:45	Speaker 2: Danielle S. Bassett , University of Pennsylvania
11:45-1:45	Lunch
1:45-5:00	Lab Session: – Neuroanatomy – Gregory Lieberman (US Army Research Laboratory) and Skirmantas Janusonis (UCSB) LOCATION: Physical Sciences Building North (PSBN), Rms. 2664 and 2666 http://www.aw.id.ucsb.edu/maps/ucsbmap.html (in D5, next to Chemistry).

Tuesday (6/25): Representations

8:00-8:45	Breakfast
8:45-10:15	Speaker 3: Marieke Mur , University of Western Ontario

- 10:15-10:30 Break
10:30-11:45 Speaker 4: **Thomas Naselaris**, Medical University of South Carolina
11:45-1:45 Lunch
1:45-5:00 Lab Session: – Neuropathology Lab/Neuropsych Videos I– **Robert Knight (Berkeley) and Robert Rafal (Delaware)**.

Wednesday (6/26): More Representations & Information Transmission

- 8:00-8:45 Breakfast
8:45-10:15 Speaker 5: **Stefano Anzellotti, Boston College**
10:15-10:30 Break
10:30-11:45 Speaker 6: **Agostina Palmigiano, Columbia University**
11:45-1:45 Lunch
1:45-5:00 Lab Session: **Information science (Palmigiano)**
6:00-8:00 Special Dinner Session: Neuropsychology Videos II (Rafal)
*******Pizza Dinner Included*******

Thursday (6/27): Networks, Graphs, Simplicial Complexes

- 8:00-8:45 Breakfast
8:45-10:15 Speaker 7: **Ann E. Sizemore**, University of Pennsylvania
10:15-10:30 Break
10:30-11:45 Speaker 8: **Marcelo Mattar, University of Cambridge**
11:45-1:45 Lunch
1:45-5:00 Debate Preparation (no lab)
6:30-8:00 **DEBATES: Teams 1 and 2** (fellows will be organized into teams during week 1)

Friday (6/28): More Network Models

- 8:00-8:45 Breakfast
8:45-10:15 Speaker 9: **Bratislav Misic, Montreal Neurological Institute**
10:15-10:30 Break
10:30-11:45 Speaker 10: **Steve Grant, NIDA**
11:45-1:45 Lunch
1:45-3:00 Speaker 11: **TBD**
3.00-3.30 Final discussion and sum-up.
3:30-5:30 Chill out
5:30 **BBQ at Goleta Beach (walking distance from campus – see map)**

Saturday and Sunday: Free, to self-assemble and enjoy the Santa Barbara area and each other's company.

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