

AGENDA

Focused Site Visit Workshop Temporal Dynamics of Learning Center

Integration of theory and experiment

**Meeting Rooms on 15, The Village, UC San Diego
June 20, 2013**

This is an assistive site visit focusing on theoretical integration. We highlight a subset of the research portfolio of our center, bringing attention to findings that emerged from the integration of formal theory and basic research, and which forge links across domains and levels of analysis. The format is a series of workshop-style presentations intended to promote in-depth discussion of featured topics, and demonstrate new questions and findings that were enabled by the center. The presentations feature a line of research that investigates brain dynamics and sensory/motor representation as a building block for learning, from basic rhythms in the brain through higher cortical function.

Thursday, June 20, 2012

7:10 & 7:35 Bus pick-up (2 trips) at the La Jolla Hyatt Hotel

7:30-7:55 Breakfast at “Meeting Rooms on 15”, The Village, UC San Diego

7:55-8:00 *Introductions.* Gary Cottrell (UCSD)

8:00-8:20 *Welcome & Center Overview.* Gary Cottrell (UCSD)

Session One: Overview and examples emphasizing the interplay of models and experiments in developing an understanding of temporal processing and memory.

8:20-8:35 *Overview of Focus areas One and Two.* Andrea Chiba (UCSD)

8:35-8:45 Discussion

8:45-9:00 *There is a time and a place for every dentate gyrus granule cell.* Lara Rangel (Postdoctoral Fellow, Eichenbaum Lab, CELEST)

9:00-9:05 Informational Questions

9:05-9:20 *A spike-timing hippocampal microcircuit to modulate learning and a practical wireless recording system for rodents.* Chris Nolan (Postdoctoral Fellow, Wiles Lab, U. Queensland)

9:20-9:25 Informational Questions

9:25-9:40 BREAK

Session Two: Bridging levels of analysis through modeling and experimentation: developing an understanding of oscillatory dynamics in the brain

9:40-9:55 *Inhibition-induced theta resonance in cortical circuits.* Lisa Roux (Postdoctoral Fellow, Buzsaki Lab, NYU)

9:55-10:00 Informational Questions

10:00-10:15 *Plasticity of gamma oscillations in barrel cortex following sensory deprivation.* Samat Moldakarimov (Project Scientist, Sejnowski Lab, Salk)

10:15-10:20 Informational Questions

10:20-10:35 *Origin and regulation of cortical gamma oscillations.* Terry Sejnowski (UCSD, Salk)

10:35-10:45 Discussion

10:45-11:05 **NSF Executive Session**

11:05-11:30 Open Discussion: *Functional role of rhythms in the brain.* Led by Andrea Chiba and a member of the site visit team

11:30-12:30 Poster and Demo session

12:30-1:10 NSF Lunch with Trainees

1:10-1:20 BREAK (TDLC researchers return to auditorium)

Session Three: Brain maturation, oscillatory dynamics, and development as predictors of sensory processing and learning.

1:20-1:40 *Overview: How can we bridge levels from oscillations to language?* Paula Tallal (Rutgers and UCSD)

1:40-1:50 Discussion

- 1:50-2:05 *Maturational change and neural dynamics across early language development: Determinants of efficient auditory mapping?* April Benasich (Rutgers)
- 2:05-2:10 Informational Questions
- 2:10-2:25 *Improving long-term knowledge retention through personalized review.* Mike Mozer (CU Boulder)
- 2:25-2:30 Informational Questions
- 2:30-2:55 **NSF Executive Session & Break**
- 2:55-3:15 Open discussion: *Brain dynamics and sensory/motor representation as building blocks for learning.* Led by Paula Tallal and a member of the site visit team

Session Four: Theoretical Synthesis

- 3:15-3:30 *Theoretical Synthesis: Part I.* Terry Sejnowski
- 3:30-3:35 Informational questions
- 3:35-3:50 *Theoretical Synthesis: Part II.* Javier Movellan
- 3:50-4:00 Discussion
- 4:00-4:25 **NSF Executive Session & Break**
- 4:25-4:50 General Discussion: *Theoretical Synthesis*, led by Gary Cottrell and a member of the site visit team

Session Five: Sustainability

- 4:50-4:55 *Executive Director's remarks:* Kim Hutson de Belle
- 4:55-5:00 Informational Questions
- 5:00-5:15 *Institutional Leader's remarks:* Sandra A. Brown, UCSD Vice Chancellor for Research
- 5:15-5:30 Discussion
- 5:30-5:45 **NSF Executive Session**
- 5:45-6:15 Additional feedback from site visit team and discussion
- 6:15-9:45 Bus to the La Jolla Hyatt every 30 minutes

Friday, June 21, 2013

NSF and Site Visitors

La Jolla Hyatt, Milos Conference Room

7:30-8:30	Breakfast
8:30-9:30	Additional Q&A with members of Executive Committee
9:30-5:00	NSF Executive session
12:30-1:30	Lunch (NSF & Site Visitors)
2:30-3:30	Break