Posters and Demos

INITIATIVE 1 – TEMPORAL DYNAMICS OF THE WORLD

Strand 1.1: Learning of Temporal Patterns

Initiative(s)

1,6 1. The Gamelan Project. Alex Khalil, Victor Minces,Deborah Foster,Scott Makeig, Paula Tallal, Judy Reilly, Tzyy-Ping Jung, Grainne McLoughlin, Andrea Chiba
(Demo Located in Auditorium)

1 2. Connecting effects of visual contrast to the visual perisaccadic temporal inversion illusion. Leo Trottier, Doug Yovanovich and Virginia de Sa

1 3. Rate and correlation across time scales. Victor Minces, Andrea Chiba

Strand 1.2: How does the relative timing of learning episodes, sequence dependencies within episodes, and feedback influence the effectiveness of learning and duration of memory?

1,4,6 4. Optimized Language Tutoring. Robert Lindsey, Michael Mozer

INITIATIVE 2 – TEMPORAL DYNAMICS OF THE BRAIN

Strand 2.1: What aspects of neuronal ensemble dynamics, measured by EEG, are important for learning?

2 5. Representation of Interval Timing by Temporally Scalable Firing Pattern in Prefrontal Cortex. Min Xu, Siyu Zhang, Muming Poo, Yang Dan

2 6. EEG and eye-hand coordination during reaching under reward. Markus Plank, Steven Hillyard, Crane Huang, Sergei Gepshtein, Joe Snider, Howard Poizner.
(Poster located in Mocap Room)

2 7. EEG features for detection of gait intent or freezing of gait. Priya Velu, Virginia de Sa.
(Poster located in Mocap Room)

Strand 2.2: What are the temporal dynamics of brain systems and the interaction between different brain systems, and how do they constrain learning and memory?

2 8. Selective Spatiotemporal Encoding in the Dentate Gyrus. Lara M. Rangel, Laleh K. Quinn, Fred H. Gage, Andrea A. Chiba

2 9. Using LTP Reversal to Study the Temporal Dynamics of Long-Term Memory. William Patton, Nicola Broadbent, Larry R. Squire, & Robert E. Clark

2,6 10. Cognitive and Anatomical Characteristics of the Learner Predict Performance in an Adaptive Math Intervention. Erik Newman, Terry Jernigan, Silvia Paparello, Connor McCabe, Matt Erhart, Ryan Gallagher, Joshua Kuperman, Anders Dale, Paula Tallal

2,6 11. Emotional and Anatomical Characteristics of the Learner Predict Performance in an Adaptive Math Intervention. Erik Newman, Paula Tallal, Silvia Paparello, Connor McCabe, Ryan Gallagher, Matt Erhart, Joshua Kuperman, Anders Dale, Terry Jernigan

Strand 2.3: How does experience shape the moment-to-moment dynamics involved in perceptual decisions?

2 12. Integral dimensions can be differentiated in dimensional but not polar morphspaces. Jonathan Folstein, Isabel Gauthier, Thomas Palmeri

2 13. The development of word and face processing abilities. Eva Dundas & Marlene Behrmann

2 14. Bootstrapping Face Processing in Autism: A Case Study. K. Suzanne Scherf, Cecily Boron, Nancy Minshew, Marlene Behrmann

INITIATIVE 3 – TEMPORAL DYNAMICS OF MOVEMENT AND EXPLORATION

Strand 3.1: How do we actively sense the dynamically changing environment and learn to use sensory feedback to control and refine behavior?

This strand has strong underpinnings in computational theory. These projects also address Initiative 4.

3,4 15. Rodents effectively learn the statistics of hidden food rewards in a novel search task. L. Chukoskie, D. Somarriba, A. Ezeume, M, Mozer, T. Sejnowski, A.A. Chiba

3,4 16. Recognizing Objects, Faces, and Flowers Using Fixational Eye Movements. Christopher Kanan, Garrison Cottrell

3,4,6 17. Nonverbal behavior in adaptive tutoring. Jacob Whitehill, Zewelanji Serpell, Aysha Foster, Yi-Ching Lin, Brittney Pearson, Marian Bartlett, and Javier Movellan

Strand 3.2: What are the temporal dynamics of non-verbal movements like grasping, reaching, communicative gestures, facial expressions, and the like?

3 18. Twelve month social “revolution” emerges from changes in dyadic sensory motor coordination. Kaya de Barbaro and Gedeon Deak

3 19. Grasping in Virtual Reality. Joseph Snider, Dongpyo Lee, Deborah Harrington, Howard Poizner
(Poster located in Mocap Room)

3 20. Automatic measurement of childrens faces during problem solving tasks. Salamanca, Littlewort, Reilly, Bartlett

Strand 3.3: How do sensorimotor and symbolic processes like language interact?

3,4 21. Biologically inspired modular robots. Alex Simpkins, Mike Kelley, and Emanuel Todorov

INITIATIVE 4 – PRINCIPLES OF THE TEMPORAL DYNAMICS OF LEARNING

Strand 4.1: Integrative Projects to explore general principles and theoretical approaches that bind empirical data or phenomena from different domains

4 22. Towards a Cross-level Theory of Neural Learning. Anthony Bell

4,3 23. Generalized 2/3 Power-Law for Curved Movements. Dongsung Huh, Terrence Sejnowksi

4,2 24. Feedback model of visual perceptual learning. Samat Moldakarimov, Maxim Bazhenov, Terrence Sejnowski

INITIATIVE 5 – DEVELOPMENT OF TECHNOLOGIES FOR THE SCIENCE OF LEARNING

5 25. The Motion Capture/Brain Dynamics Facility. Howard Poizner.
(Demo located in Mocap Room)

INITIATIVE 6.4: DEVELOP AND PROMOTE TRANSLATIONAL RESEARCH

6,3 26. A 3-part demo on face processing and facial expression interventions for children with autism. This is collaborative research that spans three institutions.
(Demo located in Break Room)

A. FaceStation: Computer Games that Train Face Perception and Reward Circuitries in Autism. G. Kohls, S. Faja, E.N. Madva, S.J. Cayless, S. Zayat, W.C. Longmire, K. Rump, J.S. Miller, and R. T. Schultz

B. Perceptual and motor learning in the recognition and production of dynamic facial expressions. J. Susskind, D. Deriso, A. Orona, J. Tanaka, R. Schultz, J. Herrington, M. Bartlett

C. Let's Face It!: An inreach/outreach model of autism intervention. Lia Best, Jenna Hatter, Marian Bartlett & Jim Tanaka

6,3 27. RUBI Net Progress Report. Nick Bucko Dan Johnson, Javier Molina, and Javier Movellan
(Demo located in Break Room)

Strand 6.2: Outreach

6 28. The Science Network. John Booth & Roger Bingham.
(Demo located in Break Room)