

Special Session on Brain, Mind and Machines
 15th International Graphonomics Society
 June 12-15, 2011; Live Aqua Cancun, Mexico

7:00 am-8:00 am	Continental Breakfast
Special session on Brain, Mind & Machines for Dexterous Movement Control June 14, 2011	
8:10 am-9:00 am	Plenary talk: “CHANGING THE CIRCUITS THAT CONTROL THE FINGERS” Marc Schieber (University of Rochester)
9:00 am-9:10 am	Introduction to Special Session & Rules Pepe Contreras-Vidal, University of Maryland School of Public Health
9:10 am-9:20 am	Sensorimotor integration for the control of grasp kinematics and kinetics: potential applications to BMI Marco Santello, Arizona State University
9:20 am-9:30 am	What of Brain-Machine Interfaces (BMI) can be left to non-cortical and peripheral processes? Francisco Valero-Cuevas, University of Southern California
9:30 am-9:40 am	What are the ‘units’ for noninvasive decoding of fine dexterous movements? Pepe Contreras-Vidal, University of Maryland School of Public Health
9:40 am-9:50 am	Is BMI training a matter of decoding explicit cognitive tasks that users engage in? Dennis McFarland, Wadsworth Center-New York
9:50 am-10:00 am	Do cortical gamma responses reflect cognitive-motor information encoding of fine motor tasks? Nathan Crone, John Hopkins University
10:00 am-10:10 am	Break
10:10 am-10:20 am	Is it possible to facilitate BMI learning with brain stimulation? Leo Cohen, National Institutes of Health
10:20 am-10:30 am	Can BMIs be used for degenerative disease and neuropsychiatry disease? Niels Birbaumer, University of Tubingen
10:30 am-10:40 am	Modeling cortical activity and connectivity from neural Spikes and LFPs in dexterous movements Nitish Thakor, Vikram Aggarwal & Soumaydipta Acharya John Hopkins University
10:40 am-10:50 am	What information is contained in the brain’s ‘noise’ that could be harnessed by BMI? Christoph Guger, Graz (Guger Technologies)
10:50 am-11:00 am	Strengths and limitations of hand prosthetics for BMI. Are we there yet? Jacob Vogelstein, John Hopkins University Applied Physics Laboratory
11:00 am-12:30 pm	Discussion: What are the most promising hypotheses/approaches for understanding and improving BMI reliability for fine motor control? Which hypotheses are most testable and how? What new collaborations may help test hypotheses? What studies are needed to move forward? Moderators: Miguel Nicolelis (Duke), Ranulfo Romo (UNAM) and Marc Schieber (Rochester)