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BMI

Brain-Mind Institute

FOR FUTURE LEADERS OF BRAIN-MIND RESEARCH

Summer School

Mon. June 25 - Fri., August 3, 2012

International Conference on Brain-Mind (ICBM)

Sat. July 14, 2012 - Sun. July 15, 2012

Michigan State University, East Lansing, Michigan USA

<http://www.brain-mind-institute.org/>

Collectively, the human race seems ready to unveil one of its last mysteries — how its brain-mind works at computational depth. The research community needs a large number of leaders who have sufficient knowledge in at least six disciplines conjunctively — Biology, Neuroscience, Psychology, Computer Science, Electrical Engineering, and Mathematics (6 disciplines). The Brain-Mind Institute (BMI) provides an integrated 6-discipline academic and research infrastructure for future leaders of brain-mind research. The BMI is a new kind of institute, not limited by boundaries of disciplines, organizations, and geographic locations.

The subjects of interest include, but not limited to:

Genes: inheritance, evolution, species, environments evolution vs. development.

Cells: cell models, cell learning, cell signaling, tissues, morphogenesis, tissue.

Circuits: features, clustering, self-organization, brain areas, classification, regression.

Streams: pathways, intra-modal attention, vision, audition, touch, taste.

Brain ways: neural networks, brain-mind architecture, inter-modal, neural modulation (punishment/serotonin, reward/dopamine, novelty/Ach/NE, higher emotion).

Experiences/learning: training, learning, development, interaction, intelligence metrics.

Behaviors: actions, concept learning, abstraction, languages, decision, reasoning.

Societies/multi-agent: joint attention, swarm intelligence, group intelligence, laws.

Diseases: depression, ADD/ADHD, drug addiction, dyslexia, autism, schizophrenia, Alzheimer's disease, Parkinson's disease, vision loss, and hearing loss.

Applications: image analysis, computer vision, speech recognition, pattern recognition, robotics, artificial intelligence, instrumentation, and prosthetics.

Keynote talks include:

James L. McClelland, Stanford University

Stephen Grossberg, Boston University

Important dates:

Full papers: by Sunday, March 4, 2012

Abstracts: by Sunday, March 11, 2012

Course applications: by Sunday, March 18, 2012

Advance registration: Sunday, April 15, 2012

Instructor applications: Sunday, April 22, 2012

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