

Press Release

Swartz Center for Computational Neuroscience
University of California San Diego
<http://sccn.ucsd.edu>

March 3, 2010

The Swartz Center for Computational Neuroscience (SCCN) and its parent Institute for Neural Computation (INC) have moved into new quarters in the recently completed extension of the San Diego Supercomputer Center on the UCSD campus. On Thursday, March 4, the Swartz Center will have a brief opening ceremony followed by a joint INC/SCCN Open House featuring open talks by Institute Co-Directors Terrence Sejnowski and Gert Cauwenberghs on the past and future of the Institute followed by demonstrations of its new research technology.

Demonstrations will include laptop based facial expression monitoring (Marni Bartlett), the IRODS distributed database system (DICE Group), and human motion capture (Howard Poizner) from INC, and brain-computer interface methods (Thorsten Zander), wireless dry electrode EEG monitoring (Tzyy-Ping Jung, Yijun Wang), experimental real-time interactive control and analysis (ERICA) software (Andrey Vankov), and mobile brain/body imaging (Scott Makeig) from SCCN.

The Swartz Center was founded in 2001 using continuing gifts from The Swartz Foundation (Old Field, NY). Last year it received over three million dollars in grant and gift support. From 2002 through 2009, the Center was housed in off-campus space. Director Scott Makeig and Associate Director Tzyy-Ping Jung say that the new, larger space will enable SCCN to continue to grow in size and diversity and the co-location of SCCN and INC will allow more effective interactions between researchers and campus faculty collaborators.

An important feature of the new Center is the mobile brain/body imaging (MoBI) laboratory built into a former basement classroom space. The new lab features high-density portable EEG and full-body motion capture, plus a sophisticated multi-channel audiovisual display and recording system, high-tech control room, and novel ERICA software allowing complex experiments involving one or more subjects acting or interacting in normal 3-D environments. "Our aim is to simultaneously record what the human brain does (via EEG), what it experiences (via audiovisual scene capture), and what it organizes (our behavior). No other functional brain imaging modality allows the head to move freely; thus so far there has been relatively little study of how our brain organizes motivated behavior." The MoBI lab development is supported by an Office of Naval Research (ONR) basic research grant.

Another technology being pioneered by the Swartz Center is wireless dry electrode EEG (brainwave measuring) systems. Associate Director Tzyy-Ping Jung points out that the major obstacle to using EEG to routinely monitor our cognition and brain function, either for medical or human-system interaction purposes, has been the lack of convenient-to-use dry electrode systems. "These systems are beginning to emerge in the marketplace now," says Jung. "We are working with a system design group at National Chiao Tung University in Taiwan to develop a wide range of applications, and in particular to design and apply high-density and very-high density systems."

The Swartz Center opening will be attended by invited representatives of UCSD, the Office of Naval Research, and Army Research Laboratories. Dr. Jerome Swartz, the Swartz Foundation founder, will be an honored guest.

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