

\$12 Million Multi-Year Gift From Swartz Foundation Funds Center For Computational Neuroscience at UC San Diego

NY entrepreneur Jerry Swartz and the innovative Swartz Center, established to study and analyze electrical activity of the brain, will be honored by UCSD on April 12

April 4, 2006

Judy Piercey

By Judy Piercey Jerry Swartz, Ph.D., a New York entrepreneur, electrical engineer and inventor of the handheld barcode laser scanner, will be honored by the University of California, San Diego for his support and leadership of UCSD's innovative studies of brain rhythms and the role they play in human cognition and awareness. The event, which will also acknowledge the accomplishments of the Swartz Center for Computational Neuroscience (www.sccn.ucsd.edu), is scheduled April 12, 2006 from 3:00 - 5:00 p.m. in the new California Institute for Telecommunications and Information Technology (Calit2) building on the UCSD campus.

In 2001, a gift of \$6 million provided by the Swartz Foundation (www.theswartzfoundation.org) helped to establish the Swartz Center for Computational Neuroscience (SCCN), part of the Institute for Neural Computation at UC San Diego. In December 2005, the Foundation committed an additional \$6 million going forward to the research center, which is fast becoming a leading worldwide resource in EEG/ICA (Electroencephalogram/Independent Component Analysis) dynamic brain imaging. These gifts contribute to the \$1 billion fundraising goal of The Campaign for UCSD: Imagine What's Next.

Swartz is a recognized expert in systems engineering, computer technologies and the allied fields of electro-optics, laser systems and optical design. He is co-founder and former chairman of Symbol Technologies, the Holtsville, NY-based global leader in mobile and wireless data transaction systems. In 1999, Swartz led Symbol to the National Medal of Technology, the highest honor for technology innovation in the U.S. In addition, he is an IEEE Fellow - that organization's highest technology honor - and an elected member of the National Academy of Engineering for "Distinguished Contributions to Engineering."

Swartz is credited with more than 200 U.S. patents, including the scanner-integrated hand-held wireless computer. He established the Swartz Foundation in 1994 to explore the application of physics, mathematics and computer engineering principles to neuroscience as a path to better understanding the brain/mind relationship.

"The collaboration of industry and government with our university is invaluable in fostering the research excellence that is the foundation of UC San Diego," said UCSD chancellor Mary e Anne Fox. "Inspired entrepreneurs like Jerry Swartz, with his expertise in innovation and intellectual property, help fuel the research that has become our tradition. We are grateful and delighted to imagine the exciting opportunities that working with Jerry and the Swartz Foundation offers our campus."

The goal of UCSD's Swartz Center for Computational Neuroscience is to mathematically model the distributed brain dynamics supporting active human cognition. Today, the SCCN supports a team of 19, which includes faculty, post- and pre-doctoral research staff and students. Using state-of-the-art equipment, they measure and analyze electrical activity from the brain, assisted by a cluster of graphics workstations powerful enough to display the brain data at the center.

So how did this New York "father" of laser scanning data transaction systems get involved with brain dynamics in San Diego? "From a systems perspective, the brain is our information processing center," explained Swartz. "The convergence of evolution and physics ... and of neuroscience and computer science ... continues to fascinate me."

In just four years, the SCCN has already made a name for itself in the observation and analysis of the brain's electrical activity. According to its director, Scott Makeig, because theoretical and concrete mathematical models of brain dynamics as well as new signal processing statistical methods are required for this type of research, the center has developed techniques now widely used by others in the field. In fact, the center's EEGLAB software is globally accepted as an open source platform for performing electrophysiological analysis and for publishing new analytical methods. Swartz noted that key research scientists at this UCSD center first developed the ICA method as staff scientists at the Salk Institute.

"Under Scott Makeig's leadership, the Swartz Center for Computational Neuroscience has achieved exceptional results in innovative studies," Swartz said. "This type of ground-breaking research is characteristic of UCSD. I am pleased that Chancellor Fox is so strongly committed to ensuring an interdisciplinary and collaborative environment at the university so critical for future achievements."

He added, "In the coming years, we envision the Swartz Center facilitating a synergy between scientists applying advancements in traditional neurobiology, mathematical physics, engineering systems and behavioral psychology to understand the relationship between brain activity and human cognition."

"Jerry likes the entrepreneurship of the UCSD leadership and faculty," said computational neuroscience pioneer Terry Sejnowski, a UCSD biology professor and director of the university's Institute for Neural Computation. "Thanks to him, the center is serving as a worldwide resource through software we've developed, workshops the center is hosting on how to use it, and the new science we do with it."

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