



The Institute for Neural Computation 2017 ROCKWOOD MEMORIAL LECTURE



Christof Koch, Ph.D.

President and Chief Scientific Officer, Allen Institute for Brain Science

Big Science, Team Science, Open Science: In the Service of Neuroscience

WHEN: Monday, April 17th - 4:00-6:00 p.m.

LOCATION: San Diego Supercomputer Center auditorium (Map); Light reception to follow

HOSTS: Terry Sejnowski, Ph.D., and Gert Cauwenberghs, Ph.D.

Five years ago, the Allen Institute for Brain Science, a non-profit medical research organization, embarked on an ambitious 10-year initiative to understand the structure and function of the neocortex and associated satellite structures in humans and mice within a team setting. We are setting up high through-put pipelines to exhaustively characterize the morphology, electrophysiology and single-cell transcriptome of cell types (www.brain-map.org) as well as their synaptic interconnections in the laboratory mouse and in human neocortex (via a combination of neurosurgical and post-mortem tissues). We are building brain observatories to image the activities of 10,000s of neurons throughout visual cortex in behaving mice, to record their electrical activities, and to analyze their connectivity at the ultra-structural level. We are constructing biophysically detailed as well as simplified computer simulations of these networks and of their information processing capabilities focusing on how the neocortical tissue gives rise to perception, behavior and consciousness. Anybody can access and view this data over our portal without any restriction. The entire project can also be seen as an experiment in the sociology of brain science.

BIOGRAPHY: Christof Koch is an American neuroscientist best known for his studies and writings exploring the brain basis of consciousness. Trained as a physicist, Koch was for 27 years a professor of biology and engineering at the California Institute of Technology. He is now President and Chief Scientific Officer at the Allen Institute for Brain Science in Seattle, leading a ten year, large-scale, high through-put effort to build brain observatories to map, analyze and understand the mouse and human cerebral cortex. On a quest to understand the physical roots of consciousness before his brain stops functioning, he published his first paper on the neural correlates of consciousness with Francis Crick a quarter of a century ago.

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The H. Paul Rockwood Memorial Lectures are endowed to the Institute by Mr. and Mrs. Jerome Rockwood in memory of their late son's interest, studies, and work in the neural computation field. Paul Rockwood received a B.S. in Computer Science from UC San Diego in 1980 and a second B.A. degree in Psychology in 1981. In 1983, he started a company, Integral Solutions, to develop universal language translation, but died tragically in a mountaineering accident before he could fulfill his promise.

