

Current trends in Biomedicine

Active Zones as Organizers of Neuronal Communication

2009

Workshops

Universidad Internacional de Andalucía

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Scope

All brain functions rely upon synapses, which are the sites of communication between neurons. Synapses are complex, each one comprising thousands of different types of macromolecules working in concert. Synapses are organized by adhesive and scaffolding molecules that align presynaptic vesicular release with postsynaptic neurotransmitter receptors, thereby allowing rapid and reliable intercellular communication. Formation of chemical synapses in the nervous system is a highly regulated, multistep process that requires bidirectional flow of information-carrying molecules across the synaptic cleft.

Active Zones (AZs) are highly organized presynaptic regions where synaptic vesicles are prepared to fuse with plasma membrane to release neurotransmitters. Most transmitter release at synapses is spatially restricted to AZs, where synaptic vesicle docking, priming, and Ca^{2+} -dependent fusion take place in a temporally highly coordinated manner. Genetic studies have begun to reveal a critical role for scaffolding and specific proteins in such processes. AZ proteins play a fundamental role in regulating neurotransmitter release and defining release sites. The functional roles of AZs components are beginning to be elucidated.

Format of the Workshop

The workshop will bring together 17 speakers and a maximum of 50 participants (including speakers). The scientific programme will start in the morning of Thursday, October 22nd, and will end around noon on Saturday, October 24th. Ample time for informal discussion will be reserved. Participants will be invited to present a poster.

Venue of the Workshop

The workshop will be held in Baeza, at the "Sede Antonio Machado", a XVII century building turned into a Conference Centre of the Universidad Internacional de Andalucía (UNIA). This Seat includes a recently restored residence, where participants will be accommodated. Baeza is a World Historic Heritage town, renowned for its Renaissance and Gothic buildings.

Organized by:

William J. Betz. University of Colorado Medical School. Aurora, USA.

Lucía Tabares. Universidad de Sevilla. Sevilla, Spain.

Speakers

William J. Betz. Department of Physiology and Biophysics, University of Colorado Medical School. Aurora, CO, USA.

Nils Brose. Department of Molecular Neurobiology and Center for the Molecular Physiology of the Brain, Max Planck Institute for Experimental Medicine. Göttingen, Germany.

Kerry R. Delaney. Department of Biology, University of Victoria. Victoria, BC, Canada.

Eckart D. Gundelfinger. Department of Neurochemistry/Molecular Biology, Leibniz Institute for Neurobiology. Magdeburg, Germany.

U.J. McMahan. Department of Biology, Texas A&M University. College Station, TX, USA.

Erwin Neher. Department of Membrane Biophysics, Max Planck Institute for Biophysical Chemistry. Göttingen, Germany.

Silvio O. Rizzoli. European Neuroscience Institute. Göttingen, Germany.

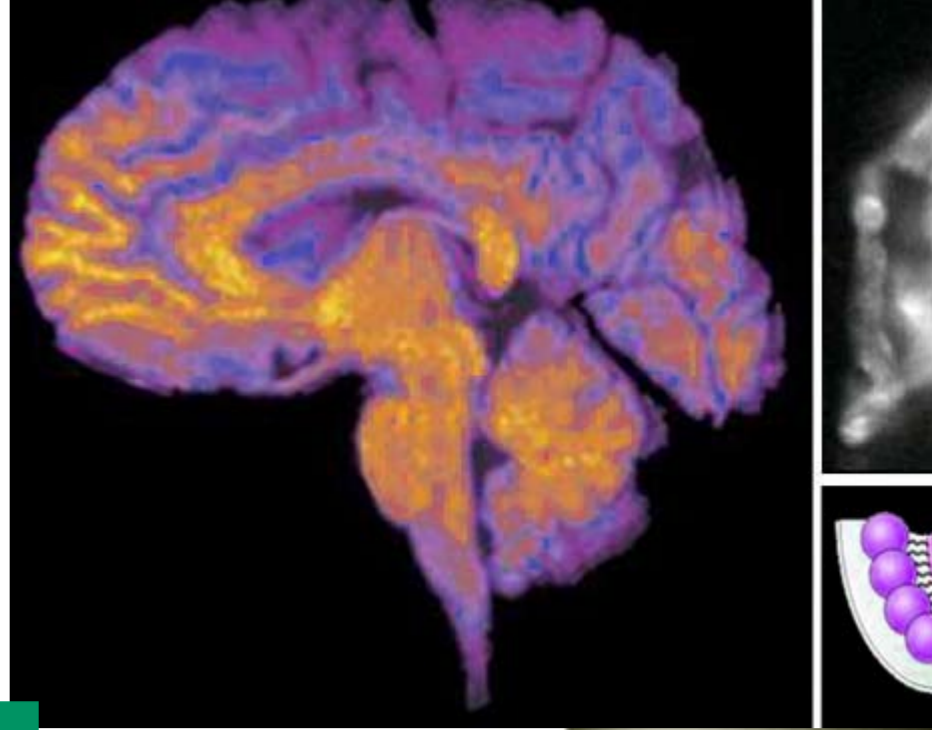
Thomas L. Schwarz. F.M. Kirby Neurobiology Center, Children's Hospital Boston, and Department of Neurobiology, Harvard Medical School. Boston, MA, USA.

Stephan J. Sigrist. Institute for Clinical Neurobiology, and Rudolf Virchow Center, University of Würzburg. Würzburg, Germany.

Thomas C. Südhof. Neuroscience Institute, Department of Molecular and Cellular Physiology, and Howard Hughes Medical Institute, Stanford University School of Medicine. Palo Alto, CA, USA.

Lucía Tabares. Departamento de Fisiología Médica y Biofísica, Facultad de Medicina, Universidad de Sevilla. Sevilla, Spain.

Masao Tachibana. Department of Psychology, Graduate School of Humanities and Sociology, The University of Tokyo. Tokyo, Japan.



Yoshimi Takai. Division of Molecular and Cellular Biology, Department of Biochemistry and Molecular Biology, Kobe University Graduate School of Medicine. Kobe, Japan.

Robert S. Wilkinson. Department of Cell Biology and Physiology, Washington University School of Medicine. St. Louis, MO, USA.

Guido A. Zampighi. Department of Neurobiology, Jules Stein Eye Research Institute, University of California, Los Angeles School of Medicine. Los Angeles, CA, USA.

Gerald W. Zamponi. Department of Physiology and Biophysics, Hotchkiss Brain Institute, University of Calgary. Calgary, AB, Canada.

Noam E. Ziv. Faculty of Medicine, and Network Biology Research Laboratories, Lorry Lokey Interdisciplinary Center for Life Sciences & Engineering, The Technion. Haifa, Israel.

Baeza, Spain
22nd-24th October 2009

Deadline:

4th September 2009

Venue:

Sede Antonio Machado
Universidad Internacional de Andalucía
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Workshop coordinator:

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More information and application:

<http://www.unia.es/biomedicine>

