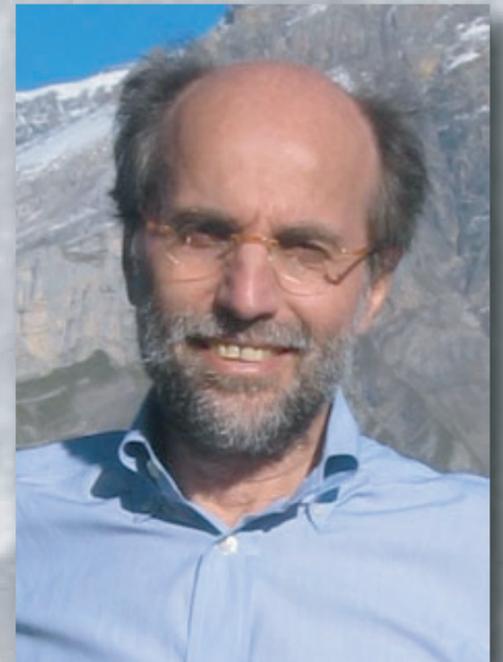


# Karl Friedrich Bonhoeffer Lecture

Dienstag, den 29.4.2008 - 17:15 Uhr  
Manfred-Eigen-Hörsaal  
Max-Planck-Institut  
für biophysikalische Chemie

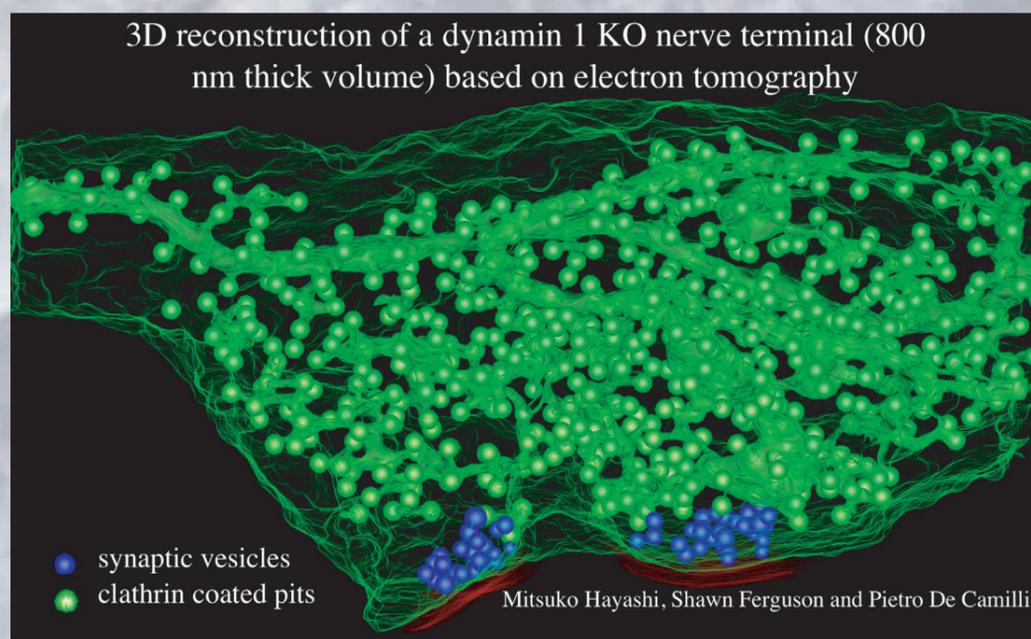
Am Fassberg 11, 37077 Göttingen



## Prof. Pietro De Camilli

Eugene Higgins Professor of Cell Biology and Neurobiology  
Howard Hughes Medical Institute;  
Yale University School of Medicine, New Haven, CT, USA

## "Endocytic Mechanisms at Neuronal Synapses"



Synaptic vesicles are the highly specialized secretory organelles that store and release non peptide neurotransmitters at synapses. Following fusion with the plasma membrane, their membranes are rapidly reinternalized by endocytosis and reutilized for new cycles of secretion. The precise mechanisms through which this membrane recycling results in the formation of new synaptic vesicles, i.e. vesicles with remarkable uniform size and biochemical composition, remain elusive. Elucidating these mechanisms will provide new fundamental insight into synaptic transmission. In addition, studies towards this goal will advance knowledge about general mechanisms of endocytosis. The talk will focus on some recent progress that we have made in this field using a variety of complementary approaches that range from reconstitution experiments with purified endocytic proteins and lipid membranes to studies of genetically modified mice. I will focus on the role of isoforms of the GTPase dynamin, a protein implicated in the fission reaction of endocytosis, as well as on the function of dynamin binding partners with curvature generating and curvature sensing properties (proteins with BAR and F-BAR domains). I will also discuss the coupling between endocytosis and the dephosphorylation of phosphoinositides at synapses and in other systems.

Gastgeber: Prof. Reinhard Jahn