Excitation-Secretion Coupling at Nerve Cell Synapses - Speed and Accuracy Matter

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Calcium-dependent transmitter release at active zones of nerve cell synapses is the fastest and most tightly regulated membrane fusion event in mammalian cells. The main reason for the extreme speed of excitation-secretion coupling in synaptic vesicle exocytosis is that synaptic vesicles arrest at active zones in a release-ready or primed state. Synaptic vesicle priming is a process of fundamental importance for brain function. It is catalysed by a set of dedicated priming proteins, mainly Munc13s and CAPSs, whose activity and regulation control synaptic strength, release probability, and short-term plasticity. These, in turn, are essential determinants of many complex brain functions such as sound localisation, cortical gain control, or working memory. In my seminar, I will discuss the molecular mechanisms by which synaptic vesicle priming is controlled in order to regulate presynaptic efficacy and plasticity.

Wednesday, March 23, 2011, 1.45 pm
Seminar Room Mondi 2, Central building, 1st floor

This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage (note that the IST Shuttle times are highlighted in lilac): http://www.ist.ac.at/fileadmin/user_upload/pdfs/IST_shuttle_2011.pdf.
The IST Shuttle bus is marked IST Shuttle and has the Institute Logo printed on the side.