



OIST OKINAWA INSTITUTE OF SCIENCE AND TECHNOLOGY
沖縄科学技術大学院大学

DISTINGUISHED VISITING SCHOLAR PROGRAM

DVSP TALK



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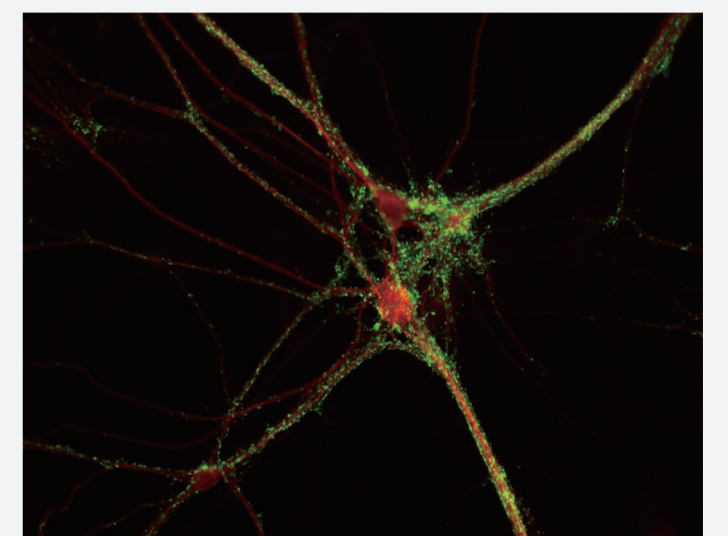
2023
FRI., **MARCH 31ST**
14:00 – 15:15 HYBRID (L4E48, ZOOM)

SHOULD I STOP OR SHOULD I GO?

EXQUISITE REGULATION OF NEUROTRANSMITTER RELEASE AT MAMMALIAN SYNAPSES

Neurons perform numerous and complex computations as they communicate with each other via neurotransmitters. The presynaptic terminal is a specialized structure, storing neurotransmitters in vesicles and ensuring their release by orchestrating signals that connect incoming action potentials with the vesicle release machinery. Syntaxin-1 is part of the presynaptic SNARE complex that participates in the transduction of incoming action potential into the fusion of synaptic vesicles with the presynaptic plasma membrane. The underlying mechanisms of how the SNARE complex and other

accessory proteins mediate the multiple steps preparing synaptic vesicles for fusion and executing the fusion itself are intensely researched. I will present our recent analysis of syntaxin-1 function in mammal neurons through the use of electrophysiological and imaging methods, as well as the use of advanced electron microscopic techniques. We discovered two novel mechanisms including post translational modification that regulate various aspects of evoked and spontaneous release.



CHRISTIAN ROSENMUND

CHARITÉ – UNIVERSITÄTSMEDIZIN BERLIN

Christian Rosenmund is a molecular physiologist and has his home laboratory at the Institute of Neurophysiology at the Charité in Berlin, Germany. Since last fall, he is visiting the Goda unit through the Distinguished Visiting Scholar Program at OIST. Christian Rosenmund is studying the function of synapses of the nervous system. Their functional properties in the brain can vary drastically. Moreover, they can be subject to rapid and long-lasting changes. This in turn has an

effect on information processing in the brain: how we learn and forget, how we think and feel, how we perceive our environment and act. In the laboratory, Christian Rosenmund investigates the fundamentals of synaptic transmission, focusing on the release of neurotransmitters. He is particularly interested in the molecular mechanisms which ultimately forms a basis for understanding how the brain functions or malfunctions.

CONTACT | FAO (FACULTY AFFAIRS OFFICE) [TSVP@OIST.JP](mailto:tsvp@oist.jp)