

MSNseminars

presents

Precise mapping of protein localization in the mammalian brain by *in vivo* genome editing

Friday May 5 at 4 pm
Hess Seminar Room B

Everyone is invited to join us for a WINE and CHEESE reception after the talk from 5-7pm on the 9th floor of Hess.

Takayasu Mikuni, MD, PhD

Laboratory of Ryohei Yasuda, Max Planck Florida Institute for Neuroscience

Dr. Mikuni will present a new technique he developed to image endogenous proteins with high specificity, resolution and contrast in single cells in mammalian brain tissue (Mikuni et al., *Cell*, 2016). The technique, termed SLENDR (single-cell labeling of endogenous proteins by CRISPR-Cas9-mediated homology-directed repair), is based on *in vivo* genome editing to insert a sequence encoding an epitope tag or a fluorescent protein to a gene of interest by CRISPR-Cas9-mediated homology-directed repair. This method is scalable to many species of proteins in diverse cell types, and permits high-resolution protein imaging with light and electron microscopy both in fixed and live tissue. Thus, SLENDR allows to rapidly and precisely determine the localization and dynamics of endogenous proteins with the resolution of micro- to nanometers in various cell types, providing a new level of understanding of cellular and molecular function of the brain.



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