京都大学　大学院生命科学研究科 / 医生物学研究所
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演題：Multimodal Optical Interrogation of Brain Circuits in Social Behavior

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１３：３０～１４：３０

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医生物学研究所2号館1階セミナー室

My research endeavor is to understand how the brain processes sensory information to control cognitive behavior in health and disease, with a focus on information transfer between distinct neuronal populations. To overcome technical challenges, I have developed novel multiplexed optical technologies and genetic tools that allow simultaneous and precise access to multiple cells and circuits, towards understanding social behavior. In this talk, I will introduce XCaMPs, a spectrally separable next-generation multicolor calcium sensor, and secondly introduce rsChRmine, a red-shifted excitatory channelrhodopsin. Using these tools, I will describe the development of an "all-optical type-to-type" method for investigating the communication between excitatory-inhibitory neural circuits in the medial prefrontal cortex associated with social behavior. Finally, I will discuss next generation tool development that will further enable the understanding of social behavior related to specific cells, circuits, and their corresponding dynamics at multiple scales.

（発表言語：英語/ Presented in English）

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