

日本動物学会北海道支部 第 580 回支部講演会

日時 : 2018 年 5 月 18 日 (金) 17:00~18:30

場所 : 北海道大学理学部 5 号館 5-813 号室

Neurobiology of Vocal Production in Frogs

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Understanding the neural mechanisms underlying behavior presents a formidable challenge requiring a well-chosen model system and sophisticated experimental tools. Vocalizations of the African clawed frog (*Xenopus laevis*) are an exceptionally well suited model system for this objective. In this species, a simplified mechanism of vocal production allows straightforward interpretations of neuronal activity with respect to behavior, and neural mechanisms of calling can be studied *in vitro* because fictive vocalizations can be elicited in the isolated brain. Furthermore, the vocalizations of *Xenopus* are sexually differentiated, and rapid androgen-induced masculinization of female vocalizations provides an invaluable opportunity for determining how new behavior arises from existing neural circuits in response to steroid hormones. In my talk, I will discuss how the vocal central pattern generators (CPG) are constructed, and an unexpected discovery of feedback pathways within the CPG that play a critical role in the rhythm generation. In addition, I will describe our work developing a technique to deliver transgenes into the frog nervous system.

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