



ONSA/CBIR セミナー・システム神経生理学セミナー

Dopamine and acetylcholine signaling in reinforcement learning and adaptive behaviors

演者

Postdoctoral Scholar, Gideon A. Sarpong

Neurobiology Research Unit, OIST, Okinawa

日時

2023年7月4日(火) 15:30-16:30

会場

大学院講義室2 M&Dタワー13階 (対面のみ)

講演要旨

発表言語は英語です (Seminar will be in English)

Humans naturally set high goals in their work and study. In the event of disappointment when those goals are not achieved, increasing motivation to overcome it, rather than accepting and 'giving up', is critical for future success. If one lacks this ability, he/she will be socially unsuccessful, leading to problems such as depression or "hikikomori" after experiencing a setback. In animal behavior, overcoming disappointments in foraging and courtship, which are often not immediately successful, are critical for survival. Despite these universal functions, the neural mechanisms underlying such motivation has not been addressed. This is because, traditionally, an animal behavior model that mimics such motivation has not been linked to a technique for monitoring neural activity in millisecond-order. By employing a novel rat behavioral paradigm in combination with in vivo imaging of dopamine neurons, we aimed to address a specific question, what is the central neural mechanism responsible for the motivation to overcome disappointment?

In this talk, I will also briefly introduce recent studies on the role of acetylcholine in behavioral flexibility and adaptive behaviors, by employing a virtual-reality behavioral task.

連絡先：システム神経生理学分野 杉原 泉 (isugihara.phy1@tmd.ac.jp)

ONSA 代表・神経機能形態学分野 寺田 純雄

CBIR センター長・精神行動医学分野 高橋 英彦

ONSA 事務局・CBIR 専任教員 味岡 逸樹 E-mail: iajioaka.cbir@tmd.ac.jp