

# Brown Bag Seminar

# No. 066

Recorded data will be uploaded

Online  
(Zoom)



2022 **9.21** (wed.) **12:10** - **12:50**

12:10-12:15

◆ Introduction

12:15-12:40

◆ Seminar  
(Presentation)

12:40-12:50

◆ Q&A

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## A sustainable society that inspired from the ants stridulatory communication research

Chair: **Assoc. Prof. Toshinori TANAKA** (Research Promotion Coordinator of Q-AOS)

### Associate Professor **Takahiro MURAKAMI**

Institute of Decision Science for a Sustainable Society



My home town is Yokohama, Kanagawa, Japan. I have gotten Ph.D. in Hokkaido University (Environmental Earth Science) in 1998. Main careers are University of Texas (UT) and Kansas University (KU) as a post doctoral researcher of Overseas Special Researcher, Japan Society for the Promotion of Science, and an associate professor of Hokkaido University of Education. Since 1993, I have been to Barro Colorado Island, Panama Republic for 11 times and 11 months. Also, I have been to UT at Austin and KU for evolutionary biology of fungus-growing ants. My main research topics are behavioral ecology and evolutionary biology of agricultural ants, and now focused on stridulatory communication research in ants. Furthermore, I conduct a conservation biology of several invasive alien ant species, such as fire ants, and Argentine ants. Recent published book is "I spoke ant language in my sleep" in Fusousha.

Do you know that ants are talkative? Since 2014, we have been researching stridulatory communication in ants, and finally unraveling the mysteries of "language" in ants. I would like to talk about the beginning of the story. The species under study are fungus-growing ants, including leaf-cutting ants, which distribute in Central and South America. These ants are "agricultural" ants that cultivate fungus in the nests. Our research team has independently developed a high-resolution recording device and succeeded in precisely recording the ants' stridulatory signals, which had previously been impossible to record. We also used electron microscopy to analyse the structure of the stridulatory organs, conducted the experiments in which made pheromone-inhibited and stridulation-inhibited groups, and explored the auditory organs by immunostaining. I would like to introduce our interesting results in this talk. These research results can be applied to various fields in the future.

#### Key Words

"ant language"

"stridulatory communication in ants"