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## Ecological Research special issue:

### Unraveling the complexity of microbial interactions to understand community dynamics and functions

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Microbial communities play essential roles in biogeochemical cycles, trophic transfer and maintaining biodiversity. The dynamics of microbial community are driven by a multitude of interactions within/between microbial populations (competition, predation, parasitism, symbiosis etc.), as well as by environment and host organisms. Yet our ability to predict and manage the function of these highly complex, dynamically changing communities is limited. High-throughput sequencing and multi-omic approaches, such as metagenomics, now allow to catalogue the diversity of microbial communities and functions *in situ*. Recent applications of different methods (experiments, metanalysis etc.) and tools (isotopes, biomarkers etc.) allow thorough evaluation of trophic relationships and bring a new point of view based on an extended knowledge of ecosystem metabolism and functioning. The key challenge now is to convert this empirical knowledge into fundamental insights and testable predictions. Mathematical models, integrative data analysis (empirical dynamic modeling etc.) and hypothesis driven experiments may help our next challenge.

This special issue welcomes contributions on unraveling the complexity of microbial interactions. Original and review papers concerning the following topics, though not exclusively, will be considered as contributions to the issue.

- Understanding the natural complexity in terms of biodiversity and interactions
- Linking community dynamics and ecological processes (carbon and nutrient cycling etc.)
- Methods and tools to understand biological interactions (competition, predation, parasitism, symbiosis etc.) and ecosystem functions
- Overlooked taxonomic groups and hidden interactions

#### Time schedule

2021.4-8: Call for papers:

2021.8-10: Deadline for sending by email title, authors and abstracts to the editors

2022.3: Deadline for submission

2022.10-12 (tentative): Deadline for acceptance

2023 (tentative): on Journal (Online first could be published in 2022)

**Ecological Research webpage:** <https://esj-journals.onlinelibrary.wiley.com/journal/14401703>

All papers will be nominated to the Ecological Research Paper Award, which will be chosen by members of the editorial board as “excellent papers”. One or two papers will be selected to be open access, whose fees will be supported by Ecological Society of Japan. With Wiley Open access Accounts, open access article publication charges (APCs) may be covered in full or part for affiliated authors. Check your eligibility in the following webpage;

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