

# William Jia-Ang Ou

PhD Candidate

Department of Zoology | Biodiversity Research Centre | University of British Columbia

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## Education

### PhD candidate in Zoology

2021-present

Department of Zoology, University of British Columbia

- Advisor: Dr. Rachel Germain
- Visiting scholar: Fukami lab, Stanford University

### Master of Science in Ecology

2021

Institute of Ecology and Evolutionary Biology, National Taiwan University

- Thesis title: *Effects of local and landscape factors on paddy field arthropod diversity: from species to communities*
- Advisor: Dr. Chuan-Kai Ho

### Bachelor of Science in Biology

2017

Biology Program, University of British Columbia

## Awards and Honours

Go Global International Learning Award (1000CAD)	2023
UBC Four Year Fellowship (18200CAD x4)	2022
NSERC BIOS <sup>2</sup> Fellow (10500CAD x3)	2021
International Tuition Award (1066CAD)	2021
President's Academic Excellence Initiative PhD Award (325CAD)	2021
Zoology Graduate Fellowship (16000CAD)	2021
Research abroad travel grant (7000NTD)	2019
NTU-NTNU Joint Symposium on Ecology and Evolutionary Biology (Outstanding poster)	2019
Faculty of Science International Student Scholarship (5000CAD)	2017
Congress of Animal Behavior and Ecology, plant-animal interactions section (1st prize)	2017
Go Global International Learning Award (2000CAD)	2016

## Research Experience

### Working group co-lead

2021

University of British Columbia, Vancouver, BC

Advisor: Drs. Rachel Germain, Tess Grainger, Dept. Zoology and Biodiversity Research Centre

- Developed a guideline for writing accessible theoretical papers based on cognitive load theory

### Research assistant

2020

National Taiwan University, Taipei, Taiwan

Advisor: Dr. David Zeleny, Institute of Ecology and Evolutionary Biology

- Developed a software for quantifying species niche width from co-occurrence data

### Research Assistant

2017 - 2020

National Taiwan University, Taipei, Taiwan

Advisor: Dr. Chuan-Kai Ho, Institute of Ecology and Evolutionary Biology

- Examined arthropod trophic interactions using stable isotopes

## Visiting Researcher

2019

Kanazawa University, Kanazawa, Japan

Advisor: Dr. Nisikawa Usio, Institute of Nature and Environmental Technology

- Tested biogeographical hypotheses of biodiversity in agroecosystems

## Undergraduate Assistant

2016 - 2017

University of British Columbia, Vancouver, Canada

Advisors: Drs. Jennifer Sunday, Joey Bernhardt, Mary O'Connor, Dept. Zoology and Biodiversity Research Centre

- Examined the temperature dependence of resource competition

## Directed Studies Student

2016

University of British Columbia, Vancouver, Canada

Advisors: Drs. Daniel Karp, Alejandra Echeverri, Kai Chan, Institute for Resources, Environment and Sustainability

- Quantified the impacts of land use change on avian populations

## Publications

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\* - equal contribution † - shared senior authorship

### Preprints

**Ou, J-A**, Huang, C-L, Chen, H-J, Tsai, C-W, Ho, C-K. 2024. Effects of local and landscape factors on paddy field arthropod diversity: from species to communities. *bioRxiv* [link]

### Submitted

**Ou, WJ-A**, Germain, R. 2025. Assortative dispersal facilitates the regional maintenance of alternative stable states. *Ecological Monographs*

### Published

Hsu, G-C, **Ou, J-A**, Ni, Min-Hsuan, Lin, Zheng-Hong, Ho, C-K. 2025. Generalist predators function as pest specialists: examining diet composition of spiders and ladybeetles across rice crop stages. *Journal of Applied Ecology* (In press)

\* **Ou, WJ-A**, \* Henriques, GJB, Senthilnathan, A, Ke, P-J, †Grainger, T, †Germain, R. 2022. Writing Accessible Theory in Ecology and Evolution: Insights from Cognitive Load Theory. *BioScience*. [link] (Faculty Opinions recommended)

\* Lin, P-A, \* Liu, C-M, \* **Ou, J-A**, Sun, C-H., Chuang, W.-P., Ho, C.-K., Kinoshita, N., & Felton, G. W. 2021. Changes in arthropod community but not plant quality benefit a specialist herbivore on plants under reduced water availability. *Oecologia*. [link]

Hsu, G-C, **Ou, J-A**, Ho, C-K. 2021. Pest consumption by generalist arthropod predators increases with crop stage in both organic and conventional farms. *Ecosphere* [link]

## Presentations

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**Ou, W.** 2025 Prospects and limits of computational thinking in biology. CSEE. Sherbrooke, QC (Oral, Invited)

**Ou, W.** 2025 Assortative dispersal facilitates the maintenance of alternative stable states. NetSci. Maastricht, the Netherlands (Oral)

**Ou, W.** 2023 Ecological theory in service of biological control. Stanford EcoEvo Seminar. Palo Alto, CA (Oral, Invited)

**Ou, W.** 2022 How to use ecological theory to inform biological control. ESA/ESC/ESBC Joint Annual Meeting. Vancouver, BC (*Oral, Invited*)

**Ou, W.** 2022 Active aggregation stabilises priority effects and promotes regional coexistence. ESA/CSEE Annual Meeting. Montreal, QC (*Oral*)

**Ou, W.** 2022 Computing biology or Biology computing? UBC internal seminar. Vancouver, BC. (*Oral*)

**Ou, W.** 2021 Changes in arthropod community but not resource quality benefits a specialist herbivore under plant water stress. BotZoo Spring Symposium. Vancouver, BC. (*Oral*)

**Ou, J-A, Huang, C-L, Chen, H-J, Tsai, C-W, Ho, C-K.** 2020 Multi-scale analysis reveals the importance of landscape for arthropod biodiversity in a rice agro-ecosystem. Taiwan Entomological Society Annual Meeting. Taipei, Taiwan. (*Oral & Poster*)

Hsu, G-C, Ou, **Ou, J-A**, Ho, C-K. 2020 Pest consumption by arthropod generalist predators increases with crop stage in organic and conventional rice farms. ESA Annual Meeting. Virtual. (*Poster*)

**Ou, J-A, Huang, C-L, Chen, H-J, Tsai, C-W, Ho, C-K.** 2019 Spatial and temporal partitioning of arthropod beta-diversity in rice agro-ecosystems. NTU-NTNU Joint Symposium for Ecology and Evolutionary Biology. Taipei, Taiwan. (*Oral & Poster*)

**Ou, J-A, Lin, P-A, Liu, C-M, Sun, C-H, Kinoshita, N., Ho, C-K, Felton, G. W.** 2019 Plant drought stress randomizes arthropod community assembly. Congress for Animal Behavior and Ecology. Taipei, Taiwan. (*Oral*)

**Ou, J-A** 2019 Taxonomic and functional insect herbivore diversity across latitude in rice agro-ecosystems. Congress for Animal Behavior and Ecology. Taipei, Taiwan. (*Poster*)

**Ou, J-A, Hsu, G-C, Ho, C-K.** 2018 Drivers of arthropod food web dynamics in rice paddy agroecosystem - a stable isotope approach. Ecological Society of Japan. Sapporo, Japan. (*Oral*)

**Ou, W.** 2017. A test for the habitat-filtering hypothesis: Modeling avian population responses to land-use change in Guanacaste, Costa Rica. Multidisciplinary Undergraduate Research Conference. Vancouver, Canada. (*Oral*)

## Teaching

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Teaching Assistant, Research Development Retreat, UBC	2023-2025
Data Carpentry Instructor, Workshop on OpenRefine, BIOS2	2024
Teaching Assistant, Advanced Ecology, UBC	2024
Guest Lecture, Ecological Methodology, UBC	2022-2023
Teaching Assistant, Advanced Ecology UBC	2021
Teaching Assistant, Numerical Methods in Community Ecology, NTU	2019
Teaching Assistant, Animal Biology Lab, NTU	2019
Teaching Assistant, Introduction to R for Ecologists, NTU	2018
Guest Lecture, Community Ecology, NTU	2018
Teaching Assistant, Community Ecology, NTU	2018

## Work experience

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- Intern, Living Data Project** 2024
- Developed a reproducible workflow for georeferencing biodiversity data
- Intern, VERICA** 2022
- Compiled, cleaned, and analyzed company incident database and contributed to annual VOID report
- Research scientist, Melio Inc.** 2020
- Developed metrics and synthesized data for quantifying environmental impacts of food
- Intern, REnato Lab** 2018
- Synthesized a circular economy handbook and built a shinyApp for visualizing corporate material flow

## Outreach and Service

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‡ - rated “best” reviewer

### Journal reviewer

- American Naturalist‡, Ecology, Ecology Letters, Evolutionary Applications, New Phytologist, Proceedings of the Royal Society B, Oikos

**Podcast guest, What is Science? Stated casually** 2022

**Communication committee, BIOS2 Fellowship Program** 2022

- Blog post: Computing biology or biology computing?

**Mentor, UBC Research Experience Program** 2021-2022

**Invited speaker, National Taiwan Science Education Center** 2019

- Talk title: *Biodiversity beyond taxonomic nomenclature* (link; 50:55-1:15)

**Editor, Green News Taiwan** 2018-2019

**Founder, NTU Biodiversity Discussion Group** 2018-2020

**Teaching Assistant, Biodiversity summer camp, Kinmen National Park** 2017

## Languages

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- Formal: R, Julia, Python (working knowledge)
- Natural: English (native), Mandarin Chinese (native), Taiwanese (proficient)

## Software

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- PalCreator - an R package for creating your own color palettes [link]
- GeoRef - an R package for georeferencing biodiversity datasets [link]

## References

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### **Dr. Rachel Germain**

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Biodiversity Research Centre  
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Vancouver, BC, V6T 1Z4, Canada  
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### **Dr. Po-Ju Ke**

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