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 Unviersity

- 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 BIOS² 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 Sutainability

- Quantified the impacts of land use change on avian populations

Publications

* - 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

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

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 fo Ecologists, NTU 2018

Guest Lecture, Community Ecology, NTU 2018

Teaching Assistant, Community Ecology, NTU 2018

Work experience

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

‡ - 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

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

Software

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

References

Dr. Rachel Germain
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Vancouver, BC, V6T 1Z4, Canada
Tel: +1 (604) 785-5965
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Assistant Professor, Institute of Ecology and Evolutionary Biology
National Taiwan University
No.1, Sec. 4, Roosevelt Rd.
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