Christian Cabuslay, Ph.D.

NSF Postdoctoral Research Fellow

University of Hawai'i at Mānoa
3190 Maile Way
Honolulu, HI 96822

RESEARCH EXPERIENCE

NSF Postdoctoral Research Fellow October 2024 - Present
University of Hawai'i at Mānoa
Advisor: Dr. Rebecca Chong

NSF Graduate Research Fellow September 2019 - August 2024
Drexel University
Department of Biology
Advisor: Dr. Jacob Russell

Graduate Student September 2018 - August 2024
Drexel University
Department of Biology
Advisor: Dr. Jacob Russell

Senior Laboratory Technician June 2016 - May 2018
University of California, Berkeley
Department of Environmental Science, Policy, and Management
Advisor: Dr. Robert Van Steenwyk

Undergraduate Researcher June 2014 - May 2016
University of California, Berkeley
Department of Plant and Microbial Biology
Advisor: Dr. Chelsea Specht
Honors Thesis: "Understanding the function of EMBRYONIC FLOWER 2 (EMF2) genes"

Undergraduate Researcher Fall 2014
Monteverde Institute

Undergraduate Researcher September 2013 - September 2014
University of California, Berkeley
Department of Environmental Science, Policy, and Management
Advisor: Dr. Neil Tsutsui

EDUCATION

Ph.D. Drexel University — August 2024
Biology
Thesis: “Evolutionary dynamics in the diverse specialized gut microbiome of cephalotine ants.”
Thesis Advisor: Dr. Jacob Russell

B.S. University of California, Berkeley — May 2016
Molecular Environmental Biology, Focus in Insect Biology

AWARDS

Postdoctoral Research Fellowship in Biology (PRFB), NSF — 2024
$240,000

Graduate Research Fellowship Program (GRFP), NSF — 2019
$138,000

Gold Graduate Research Fellowship, Drexel University — 2018
$10,000

Sponsored Projects for Undergraduate Research, University of California, Berkeley — 2015
$2,000

PEER-REVIEWED PUBLICATIONS

- **Cabuslay C**, Wertz JT, Béchade B, Hu Y, Braganza S, Freeman D, Pradhan S, Mukhanova M, Powell S, Moreau C, Russell JA. Domestication and evolutionary histories of specialized gut symbionts across cephalotine ants. Mol Ecol. 2024 Aug;33(15):e17454. doi: 10.1111/mec.17454. Epub 2024 Jul 15. PMID: 39005142
- Béchade, B., **Cabuslay, C.S**., Hu, Y. et al. Physiological and evolutionary contexts of a new symbiotic species from the nitrogen-recycling gut community of turtle ants. ISME J 17, 1751–1764 (2023). https://doi.org/10.1038/s41396-023-01490-1
- Benoît Béchade, Yi Hu, Jon G Sanders, **Christian S Cabuslay**, Piotr Łukasik, Bethany R Williams, Valerie J Fiers, Richard Lu, John T Wertz, Jacob A Russell, Turtle ants harbor metabolically versatile microbiomes with conserved functions across development and phylogeny, FEMS Microbiology Ecology, Volume 98, Issue 8, August 2022, fiac068, https://doi.org/10.1093/femsec/fiac068
- Hu, Yi, D'Amelio, Catherine L., Béchade, Benoît, **Cabuslay, Christian S.**, Łukasik, Piotr, Sanders, Jon G., Price, Shauna, et al. 2023. “Partner Fidelity and Environmental Filtering Preserve Stage-Specific Turtle Ant Gut Symbioses for over 40 Million Years.” Ecological Monographs 93(1): e1560. https://doi.org/10.1002/ecm.1560

- Van Steenwyk, R.A., Siegel, J.P., Bisabri, B., **Cabuslay, C.S.**, Choi, J.M., Steggall, J.W., Mace, K.C., Blecker, S.W., Poe, P.A., Peters-Collaer, S.R. and Klassen, P. (2021), Spray drift mitigation using opposing synchronized air-blast sprayers. Pest Manag Sci, 77: 895-905. https://doi.org/10.1002/ps.6094

OTHER PUBLICATIONS

- Robert A Van Steenwyk, **Christian Cabuslay**, Jaimie Choi, Control of Peach Twig Borer in Almond, 2018, Arthropod Management Tests, Volume 44, Issue 1, 2019, tsz021, https://doi.org/10.1093/amt/tsz021
- Van Steenwyk, R.A., Doll, D., Wong, B.J., **Cabuslay, C.S.** and Wirakusumah, D.A. (2018). Changing insect pest management of pistachio and almond in California (2000 to 2014). Acta Hortic. 1219, 345- 352, https://doi.org/10.17660/ActaHortic.2018.1219.52
- Robert A Van Steenwyk, Benjamin J Wong, **Christian Cabuslay**; Control of Two Erythroneura Leafhoppers in Wine Grapes, 2016, Arthropod Management Tests, Volume 43, Issue 1, 1 January 2018, tsy040, https://doi.org/10.1093/amt/tsy040
- Robert A Van Steenwyk, Benjamin J Wong, Ruth Poliakon, **Christian Cabuslay**; Control of Vine Mealybug in Wine Grapes, 2016, Arthropod Management Tests, Volume 43, Issue 1, 1 January 2018, tsy041, https://doi.org/10.1093/amt/tsy041
- Robert A Van Steenwyk, Benjamin J Wong, **Christian Cabuslay**, Jaimie Choi; Control of Walnut Husk Fly in Walnut, 2016, Arthropod Management Tests, Volume 43, Issue 1, 1 January 2018, tsy042, https://doi.org/10.1093/amt/tsy042
- Robert Van Steenwyk, Dani Lightle, **Christian Cabuslay**, Jaimie Choi; Control of Olive Fruit Fly in Olive, 2017, Arthropod Management Tests, Volume 43, Issue 1, 1 January 2018, tsy044, https://doi.org/10.1093/amt/tsy044
- Robert A Van Steenwyk, **Christian Cabuslay**; Control of Peach Twig Borer in Almond, 2017, Arthropod Management Tests, Volume 43, Issue 1, 1 January 2018, tsy043, https://doi.org/10.1093/amt/tsy043

PRESENTATIONS AND POSTERS

Presentations

- **Christian Cabuslay**, Daniel Freeman, Yi Hu, John Wertz, and Jacob Russell; “18’s a crowd! The evolution of a diverse microbial symbiosis in Cephalotes turtle ants,” Entomology, 2023
- **Christian Cabuslay**, Daniel Freeman, Yi Hu, and Jacob Russell; “Diverse histories in a diverse gut symbiont community,” Evolution, 2022.
- **Christian Cabuslay**; “A closer look at the turtle ant gut microbiome,” Drexel Biology Graduate Seminar, 2022

- **Christian Cabuslay**, Yi Hu, Shreyansh Pradhan, Jawhara Karam, Daniel Freeman, Sonali Braganza, and Jacob Russell; “Genome evolution in a conserved yet diverse symbiotic community,” Entomology, 2021
- **Christian Cabuslay**, Yi Hu, John Wertz, Shreyansh Pradhan, and Jacob Russell, “Diverse evolutionary histories in the diverse yet conserved turtle ant gut microbiome,” Evolution, 2021 *Virtual
- **Christian Cabuslay**; “The (evolutionary) life and times of Cephalotes gut symbionts,” Drexel Biology Graduate Seminar, 2021
- **Christian Cabuslay**, Yi Hu, Maria Mukhanova, Shreyansh Pradhan, Emma Kerr, John T Wertz, and Jacob Russell, “Cospeciation and genome evolution in the diverse yet conserved turtle ant gut microbiome,” Entomology, 2020 (*Virtual*)
- **Christian Cabuslay**; “Genome evolution in Cephalotes symbionts,” Drexel Biology Graduate Seminar, 2020 (*Virtual*)

Posters

- **Christian Cabuslay**, Yi Hu, Maria Mukhanova, Emma Kerr, and Jacob Russell; “Coevolution of Cephalotes ants and their gut bacteria,” Drexel Emerging Graduate Scholars Conference, 2020 (*Virtual) Second place in poster competition*
- **Christian Cabuslay**, Yi Hu, Catherine D’Amelio, Benoit Bechade, Emma Kerr, and Jacob Russell; “Food and function: a study of ant diet and nutritive capacity of symbiotic bacteria,” Lehigh Valley Ecology and Evolution Symposium, 2019 *Third place in poster competition*
- **Christian Cabuslay**, Yi Hu, Catherine D’Amelio, Benoit Bechade, Emma Kerr, and Jacob Russell; “Food and function: a study of host diet and nutritive capacities of symbiotic bacteria,” Entomology, 2019 *Second place in poster competition*

Co-Authored Posters in a Mentoring Capacity (*presenting authors)

- Jaden Drumm*, Jibraan Rahman*, … **Christian Cabuslay**, Alison Moyer; “There are no mistakes, only happy accidents: Deviation from phage amplification protocol yielded high titers of the novel Actinobacteriophage OldNelly (EA1),” SEA Symposium, 2024 (*Virtual*)
- Daniel Freeman*, **Christian Cabuslay**, and Jacob Russell; “History of genome reduction in Cephalotes gut symbionts,” American Association for the Advancement of Science, 2023. *First place in poster competition*
- Daniel Freeman*, **Christian Cabuslay**, Jawhara Karam, and Jacob Russell; “Patterns of horizontal gene transfer in Cephalotes gut symbionts,” Drexel Biodiversity, Earth and Environmental Science Research Day, 2022
- Daniel Freeman*, **Christian Cabuslay**, Jawhara Karam, and Jacob Russell; “Genome evolution in Cephalotes gut symbionts,” Lehigh Valley Ecology and Evolution Symposium, 2022. *Virtual*

TEACHING EXPERIENCE

Teaching Assistant Fall 2023 - Spring 2024

Course: SEA-PHAGES

Drexel University
- Discovery-based research experience for freshmen students
- Collection, isolation, description, sequencing, and annotation of novel bacteriophages
- Guided independent research projects to further characterize novel bacteriophages
- Poster presentations of student research at national and local symposia

Teaching Assistant Winter 2019

Course: Evolution and Organismal Diversity
Drexel University
- Discussion of introductory topics in evolutionary and organismal biology

Teaching Assistant Fall 2018

Course: Cells and Genetics
Drexel University
- Discussion of introductory topics in cell biology and genetics

MENTORSHIP

Drexel University
- Daniel Freeman, 2021-2023 (remote and in-person)
- Sonali Braganza, 2021-2022 (remote and in-person)
- Jawhara Karam, 2021 (remote)
- Maria Mukhanova, 2019-2020
- Shreyansh Pradhan, 2019-2021
- Luiselys Hernandez, 2019
- Emma Kerr, 2018-2019

PROFESSIONAL AFFILIATIONS

Entomological Society of America	2019 - Present
Society for the Study of Evolution	2020 - Present
International Society for the Study of Social Insects, North American Section	2019 - Present

PROFESSIONAL SERVICE

Conference Co-Organizer

Social Insects in the Northeast Region (SINNERS), 2018

Invited Panelist

Society of Asian Scientists & Engineers Conference, 2021 (Virtual)

Peer-Reviewer
- Molecular Ecology

- Microbial Ecology
- Current Microbiology

COMMUNITY OUTREACH

Bug Fest, Scientist Meet-and-Greets 2019, 2022
Academy of Natural Sciences, Philadelphia, PA

Insect Study Merit Badge Counselor 2016 - Present
Scouting America

Hopland Bioblitz, Participant, Photographer 2016
Hopland Research and Extension Center, Hopland, CA

Monteverde Institute Research Symposium, Presenter 2014
Monteverde Institute, Monteverde, Costa Rica