**JENNIFER M. COCCIARDI**

Curriculum Vitae (*updated Apr 2024*)

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**EDUCATION**

 **Doctor of Philosophy (PhD)**: Ecology and Evolutionary Biology 2021

James Cook University**,** College of Science and Engineering, Townsville, QLD

 *Thesis Title*: Adaptation under climate change.

 *Advisors*: Dr Megan Higgie, Dr Conrad J. Hoskin

 **Certification of Professional Achievement**: Ecology, Evolution, and Environmental Biology 2014

Columbia University, College of Continuing Education, New York, New York

 **Bachelor of Arts (BA)**: Environmental Studies, with University Honors 2012

New York University, College of Arts and Sciences, New York, New York

 *Minor*: Environmental Biology

**PROFESSIONAL APPOINTMENTS**

 **NSF Postdoctoral Research Fellow in Biology** 2024–present

 Project title: Considering evolutionary responses to temperature variability when predicting risk to climate change and disease in amphibians.

 *Advisors*: Dr Michel Ohmer, Dr Mark Wilbur

 **Postdoctoral Researcher**: Department of Biology 2022–2023

 University of Mississippi

 *Resilience Institute Bridging Biological Training and Research (RIBBiTR)*

 *Advisor*: Dr Michel Ohmer

 **Postdoctoral Fellow**: Department of Earth and Planetary Sciences 2021–2022

Johns Hopkins University

*Advisor*: Dr Meghan Avolio

**FELLOWSHIPS**

2024–2026 **Postdoctoral Research Fellowship in** **Biology**, National Science Foundation: competitive training and research scholarship for early career researchers, *$240,000 USD*

2016–2020 **Postgraduate Research Scholarship**, James Cook University: competitive scholarship recognizing academic excellence and research promise, *$52,000 USD/yr ($208,000 total*)

2019 **Graduate Education Scholarship**, American Australian Association: competitive fellowship recognizing innovative research and the next generation of young leaders, *$13,000 USD*

**RESEARCH GRANTS AND AWARDS**

2023­ **SEC Emerging Scholar Postdoctoral Fellow**, competitive award intended to retain academic talent at universities within the Southeastern Conference, provides professional development and networking opportunities, *$4,500 USD*

2018, 2019 **Competitive Funding Grant Scheme**, James Cook University, *$4000 USD*

2018 **Competitive Travel Award**, James Cook University, *$800* USD

2018 **Cassowary Award**, Wet Tropics Management Authority, *$2000 USD*

2017 **Wiley Blackwell Fundamental Ecology Award**, Ecological Society of Australia, *$4000 USD*

2017 **Graduate Student Research Award**, American Society of Naturalists, *$2000 USD*

2012 **Founders Day Award**, New York University

2012 **First Place** in Dean’s Undergraduate Research Conference, New York University

2008–2012 **Honors Scholar**, New York University

2011 **Research Experience for Undergraduates**, National Science Foundation, *$5000 USD*

2009­–2010 **Dean’s Circle Award**, Sophomore Honors Society, New York University, Included all-expenses-paid *research* trip to Berlin, Germany

**PUBLICATIONS**

**Cocciardi JM** and Ohmer MEBO. Drivers of intraspecific thermal trail variation and their importance for resilience to global change in amphibians. *In review* at *Integrative and Comparative Biology*.

Moreno-García P, Savage A, Salgado AL, Tartaglia ES, **Cocciardi JM**, Aronson M, Jarzyna MA, Alberti M, Li D. Urban ecology beyond species: the effects of urbanization on species interactions. *In review* at *Nature Cities*.

**Cocciardi JM**, Hoffman AM, Waananen A, Des Marais DL, Moeller D, Gamba D, Alvarado-Serrano D, Boehm E, Kottler E, Bradburd G, Branch H, Borokini I, Cavender-Bares J, Lau J, Anderson J, Jaros J, Toll K, Whitney K, Bolin L, Brudvig L, Ungerer M, Vahsen M, Blumstein M, Smith M, Howard M, Menon M, Hanan NP, Kooyers N, Shaw R, Sheth S, Wadgymar S, Mozdzer T, Juenger T, Chen Y, Avolio ML. 2023. The value of long-term ecological research for evolutionary insights. *In review* at *Nature Ecology and Evolution*.

**Cocciardi JM**, Hoskin CJ, and Higgie M. Testing the thermal coadaptation hypothesis: linking oviposition temperature preference to fitness in a generalist and specialist *Drosophila* species. *In review* at *Ecosphere.*

**Cocciardi JM**, O’Brien E, Hoskin CJ, Stoetzel H, and Higgie M. 2021. The predictive potential of key adaptation parameters and proxy fitness traits between benign and stressful thermal environments. bioRxiv 2021.04.29.441345.

**Cocciardi JM**, Hoskin CJ, Morris W, Warburton R, Edwards L, and Higgie M. 2019. Adjustable temperature array for characterizing ecological and evolutionary effects on thermal physiology. *Methods in Ecology and Evolution* **10**: 8, 1339–1346.

*In preparation*:

**Cocciardi JM**, Hoskin CJ, O’Brien E, and Higgie M. Surviving a heatwave does not future-proof populations for the next heatwave. *In preparation.*

**Cocciardi JM**, Hoskin CJ, and Higgie M. 2023. Can interspecific competition drive rapid evolution of the thermal niche? A test using experimental evolution. *In preparation.*

**TEACHING AND RESEARCH MENTORING/SUPERVISION**

2024 Advisor for undergraduate Honor’s thesis

 *Project title*: “Using artificial reproductive technologies to improve amphibian conservation”

 University of Mississippi, Department of Biology, Oxford, MS

2024 Advisor for undergraduate Honor’s thesis

 *Project title*: “Designing a circular thermal preference arena for climbing frogs.”

 University of Mississippi, Department of Biology, Oxford, MS

2024 Advisor for undergraduate Honor’s thesis

 *Project title*: “Designing a rectangular thermal preference arena for climbing frogs.”

 University of Mississippi, Department of Biology, Oxford, MS

2024 Advisor for undergraduate Minor Project and Seminar

 *Project title*: “Uncovering microhabitat variability for vulnerable amphibians using FLIR photos.”

University of Mississippi, Department of Biology, Oxford, MS

2024 Guest Lecturer

*Course*: Physiology Undergraduate Core Course

 University of Mississippi, Department of Biology, Oxford, MS

2023 Advisor for undergraduate CURE Project

 *Project title*: “The effects of heatwaves on the thermal physiology of amphibians.”

 University of Mississippi, Department of Biology, Oxford, MS

2019 Advisor for undergraduate Minor Project and Seminar

*Project title*: “Effect of environmental variance on heritability of fitness traits.”

James Cook University, College of Science and Engineering, Townsville, QLD

2017 Teaching and grading assistant

*Courses*: Wildlife ecology and management; 2nd– ­and 3rd–year level

James Cook University, College of Science and Engineering, Townsville, QLD

2016 Advisor for undergraduate Minor Project and Seminar

*Project title*: “Intraspecific competition stabilizes niche in experimental *Drosophila* populations.”

James Cook University, College of Science and Engineering, Townsville, QLD

*Continuing education on teaching*:

2022 Johns Hopkins Teaching Institute, The Teaching Academy

**CONFERENCES, WORKING GROUPS, AND WORKSHOPS**

*Working Groups and Workshop Organization*

Jan 2024 Invited participant in a three-day working group on Urban Ecological and Evolutionary Biology. Virtual.

Nov 2023 Invited participant in three-day working group in Urban genomics. Baltimore, MD. USA.

Oct 2023 SEC Emerging Scholars Career Preparation Workshop. University of Arkansas, AK. USA

Jul 2023 Genetic Analyses using ASReml-R, VSNI. Charlotte, NC. USA.

Sept 2022 Organized workshop at the ‘Long-term Ecological Research Network’s All-Scientist’ meeting: ‘Integrating evolutionary processes into the LTER framework’. Asilomar, CA. USA.

Aug 2022 Invited participant in week-long working group in Urban Ecology and Evolutionary Biology. Sevilleta Long-term Ecological Research Site, New Mexico. USA.

May 2022 Organized and led NSF-funded, week-long working group focused on exploring the role of evolutionary processes at Long-Term Ecological Research Sites (LTERs). Sevilleta Long-term Ecological Research Site, New Mexico. USA.

*Invited talks*

Sept 2023 “It’s getting hot in here – can evolutionary adaptation help?” Conservation Physiology course lecture series, University of Mississippi, MS. USA.

Jun 2023 “Future Proofing Frogs.” Lunch and Learn Seminar, Oakland Zoo, Oakland, CA. USA.

Nov 2018 “Do heatwaves cause maladaptation? A case study using rainforest *Drosophila*.” 2017 Wiley Blackwell Fundamental Ecology Award Speaker. Conference of the Ecological Society of Australia. Brisbane, QLD. Australia.

*Submitted talks and posters*

Feb 2024 “Novel competition causes rapid adaptation of the thermal niche.” Department of Biology Research mixer, University of Mississippi, Oxford, MS. USA.

Jan 2024 “Previous exposure to a fungal pathogen and it’s effect on thermal preference and survival in an endangered frog species.” National Science Foundation Biological Integration Institute Meeting. Washington D.C., USA.

May 2022 “Novel competition causes rapid adaptation of the thermal niche”. Evolution and Long-term Ecology Working Group. Sevilleta, New Mexico, USA.

Jun 2019 “Does surviving heatwaves future-proof populations?” Evolution 2019. Providence, Rhode Island, USA.

Aug 2018 “What are the fundamental and preference niches of a rainforest generalist versus specialist?” Second Joint Conference on Evolutionary Biology. Montpellier, France.

April 2012 “The Effects of Non-native Species Introduction on Benthic Macroinvertebrate Communities.” New Jersey Academy of Science Conference. South Orange, New Jersey, USA.

April 2012 “The Effects of Salinity Variance on the Invasive Species, Eurasian Watermilfoil (*Myriophyllum spicatum)*”. Deans Undergraduate Research Conference. New York University. New York, New York, USA.

**RESEARCH EXPERIENCE**

2024–current National Science Foundation, Postdoctoral Research Fellow

**Global change biology and wildlife disease ecology**: Research includes investigating the effects of disease on long-term resilience of vulnerable amphibian populations to climate change.

2022–2023 Postdoctoral Fellow, University of Mississippi

**Global change biology and wildlife disease ecology**: Research with the *Resilience Institute Bridging Biological Training and Research* included investigating the effects of climate change and disease on amphibian populations. Duties include: designing, performing, and analyzing data for experiments on the effect of disease on thermal physiology of frogs in North America, Central America, and South America; field work in tropical and temperate ecosystems; laboratory work with infectious wildlife disease and amphibians.

2021–2022 Postdoctoral Researcher, Johns Hopkins University

**Urban genomics and evolution:** Primary research focuses on the population genetics and parallel evolution of various weed species across five United States cities. Duties also include organizing and leading a week-long NSF-funded workshop focused on leveraging long-term ecological data for evolutionary research.

2016–2021 Graduate Student Researcher, James Cook University

**Tropical ecology and evolution:** Thesis research investigated the effects of gradual and sudden climate-change on adaptation of the thermal niche in two sister-species of tropical *Drosophila*. Research included examining how interspecific competition, temperature preference, and thermal tolerances affect adaptation under climate change.

2016­–2018 *Drosophila* laboratory research technician, James Cook University

**Tropical ecology and evolution***:* Assisted with collaborative research projects investigating how biotic interactions affect sexual character displacement and community structure in rainforest *Drosophila*.

2015 Vertebrate laboratory research technician, James Cook University

**Wildlife disease ecology:** Assisted with experiments that examined the effects of varying temperature regimes on the amphibian chytrid fungus (*Batrachochytrium dendrobatidis*).

2014 Student Researcher, Columbia University, *Academic Advisor*: Dr Marina Cords

**Animal behavior:**Examined hand preference in gap-crossing and feeding behaviors of captive Japanese macaques.

2014 Student Researcher, Columbia University, *Academic Advisor*: Dr Francine Kershaw **Molecular ecology**: Researched the molecular genetics of multiple populations of fruit bat in the south Pacific. Mined data from *Genbank* and aligned and analyzed in *MEGA* and various population genetic packages in *R*.

2012­–2014 Ecological Scientist II, Langan Engineering and Environmental Services, Inc.

**Ecotoxicology**: Performed species surveys, field data collection data analysis, and food chain transfer modeling of site-related contaminants in species of concern. Prepared Ecological Evaluation reports for governmental review.

2012 Student researcher for *The Welikia Project,* Wildlife Conservation Society

*Academic Advisor*: Dr Eric Sanderson

**Landscape ecology**: Researched the landscape ecology of Manhattan’s outer boroughs and created historical geography datasets to expand on *The Manahatta Project*.

2011 REU Recipient, National Science Foundation, New Jersey School of Conservation

**Forest Lake Ecology**

2011 Research technician, WildMetro Environmental Organization Intern

**Urban ecology**: Completed small mammal population surveys in New York City Parks.

2009 Ecological Laboratory Technician**,** PA Department of Environmental Protection Laboratory **Wildlife disease ecology**: Collected and identified mosquito and black fly specimens to the species level to identify vectors of West Nile Virus and subsequently test for the presence of the virus.

**OUTREACH AND SERVICE**

Program Associate and Organizer for ARISE at University of Mississippi (**A** **R**esearch **I**mmersive **ST**EM **E**xperience)

Manuscript reviewer for *Methods in Ecology and Evolution*, *Austral Ecology*

Scholarship/grant reviewer for *American Australian Association*

Member of *American Society of Naturalists*, *Ecological Society of Australia*, *Society for the Study of Evolution*, *American Australian Association*

**RELEVANT SKILLS**

**Coding programs and languages**: C/C++ for use with Arduino and R/R Studio, command line interpreter (Unix shell) using Bash, Github for storage and reproducibility

**Experimental analysis***:* ArcGIS, Arduino, ImageJ, R and R Studio, Stacks, FLIR cameras and thermal studio

**Field and Laboratory skills:** *Drosophila* husbandry, field lead experience in tropical and temperate ecosystems, morphology analysis, quantitative genetic experimental design/analysis

**Scientific Illustration**: Adobe Illustrator, Affinity Designer, Inkscape

**Statistical methods**: mixed modeling, multivariate statistics, non-linear least square modeling, quantitative genetic modeling