JENNIFER M. COCCIARDI

NSF Postdoctoral Fellow
Department of Biology
University of Mississippi
jmcoccia@olemiss.edu | jennifercocciardi.com

RESEARCH INTERESTS

Evolutionary ecology • Ecophysiology • Conservation biology • Tropical ecology • Urban ecology

PROFESSIONAL APPOINTMENTS

NSF Postdoctoral Research Fellow in Biology 2024–present
Considering evolutionary responses to temperature variability when predicting risk to climate change and disease in amphibians.
Sponsoring scientists: Dr Michel Ohmer (University Mississippi), Dr Mark Wilber (University of Tennessee)
Maternity leave: Jul–Oct 2024, Mar–Aug 2026

Postdoctoral Researcher: Department of Biology 2023
University of Mississippi
Resilience Institute Bridging Biological Training and Research (RIBBiTR)
Advisor: Dr Michel Ohmer

Postdoctoral Fellow: Department of Earth and Planetary Sciences 2022
Johns Hopkins University
Advisor: Dr Meghan Avolio

EDUCATION

Doctor of Philosophy (PhD) 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

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

FELLOWSHIPS

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

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

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

RESEARCH GRANTS AND AWARDS

2025 **Scientific Meeting Grant**, The Company of Biologists *£1000 GBP*
To assist speakers in attending our symposium at the International Congress of Conservation Biology: "Diverse Perspectives in Conservation: Uniting Physiology, Innovative Modelling, and Transdisciplinary Approaches."

2023 **SEC Emerging Scholar Postdoctoral Fellow** *$4500 USD*
Competitive award intended to retain academic talent at universities within the Southeastern Conference, provides professional development and networking opportunities.

2018, 2019 **Competitive Funding Grant and Travel Scheme**, James Cook University *$3000 AUD*
To support doctoral research.

2018 **Student Research Award**, Wet Tropics Management Authority *$2250 AUD*
Competitive award to support postgraduate research in the Wet Tropics World Heritage Area that is then used to directly inform conservation management of the World Heritage site.

2017 **Wiley Blackwell Fundamental Ecology Award**, Ecological Society of Australia *$5000 AUD*

	Competitive award to support exceptional postgraduate research in the field of fundamental ecology and that advances the science of ecology.	
2017	**Graduate Student Research Award**, American Society of Naturalists Competitive award to support research by student members that advances the conceptual unification of ecology, evolution, or behavior.	*$2000 USD*
2012	**Founders Day Award**, New York University. University Honors for undergraduates with greater than a 3.50 GPA.	
2012	**First Place** in Dean's Undergraduate Research Conference, New York University Award for best presentation at the Undergraduate Research Conference.	
2008–2012	**Honors Scholar**, New York University.	
2011	**NSF Research Experience for Undergraduates** Montclair State University, Forest Lakes Ecology. Living stipend plus housing, meals, and travel to participate in a research project.	*$4600 USD*
2009–2010	**Dean's Circle Award**, Sophomore Honors Society, New York University Year-ling honors seminar, award included an all-expenses-paid *research* trip to Berlin, Germany.	*$4500 USD*

PUBLICATIONS

Peer-reviewed publications:

Alberti M, Grimm NB, Palkovacs EP, Urban MC, Verrelli BC, Anderson P, Carlen EJ, **Cocciardi JM**, Cook EM, Fortim MJ, Gotando KM, Hobbie S, Johnson MTJ, Malesis AN, Miles LS, Palacios R, Phifer-Rixey M, Salazar-Valenzuela D, Salazar C,… Zhou Y. 2026. Evolving Nature-Based Solutions for Urban Resilience. *Science* 392(6799): 701–708. doi: 10.1126/science.aea9563.

Hoffman AM, **Cocciardi JM**, Manna P, Alvarado-Serrano DF, Cavender-Bares J, Groffman PM, Hall SJ, Hobbie SE, Lerman SB, Cubino JP, Pataki DE, Trammell TLE, and Avolio ML. 2026. Genetic diversity and population structure in cities is not consistent among cosmopolitan plant species. *Molecular Ecology* 35: e70261. doi: 10.1111/mec.70261.

Moreno-García P, Savage A, Salgado AL, Tartaglia ES, **Cocciardi JM**, Aronson M, Jarzyna MA, Alberti M, Li D. 2025. The effects of urbanization on species interactions. *Nature Cities*. doi: 10.1038/s44284-025-00288-w.

Carlen EJ, Caizergues AE, Jagiello Z, Kuzyo H, Munshi-South J, Alberti M, Angeoletto F, Bonilla S, Booth W, Charmantier A, **Cocciardi JM**, Cook EM, Gotando KM, Govaert L, Johnson LE, Li D, Malesis AN, Martin E, Marzluff JM, Mazurek M, Miles LS,… Szulkin M. 2025. Legacy effects of religion, politics, and war on urban evolutionary biology. *Nature Cities*. doi: 10.1038/s44284-025-00249-3.

- *Popular science article*: Carlen E, Angeoletto F, Bonilla-Bedoya S, **Cocciardi JM**,…Johnson LE. "Religião, Política e Guerras na Evolução de Espécies Urbanas." O Povo (Brazilian Newspaper). Oct 2025.
- *Media coverage*: Featured in Los Angeles Times, "How California culture influenced the evolution of wild animals in L.A."

Cocciardi JM and Ohmer MEBO. 2024. Drivers of intraspecific thermal trail variation and their importance for resilience to global change in amphibians. *Integrative and Comparative Biology*. doi: 10.1093/icb/icae132.

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,… Avolio ML. 2024. The value of long-term ecological research for evolutionary insights. *Nature Ecology and Evolution* 8: 1584–1592. doi: 10.1038/s41559-024-02464-y.

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. doi: 10.1111/2041-210X.13236.

In review/revision:

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 revision* for *Ecosphere.*

Diele-Viegas LM, Melo Gomes F, **Cocciardi JM**, Rodgers E, and Ohmer MEB. 2026. Diverse Perspectives in Conservation: Uniting Physiology, Innovative Modelling, and Transdisciplinary Approaches. *In review* at *Conservation Physiology.*

Smith H*, Hall M*, Knotts L*, Briggs E*, Phillips D*, Hoffman H*, **Cocciardi JM,** and Ohmer MEB. Optimizing thermal preference assay methodology for frogs. *In review* at *Journal of Thermal Biology*.

Preprints:

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. doi: 2021.04.29.441345. *In prep* for *Journal of Evolutionary Biology.*

Kramp RD, **Cocciardi JM**, Walsman JC, and Ohmer MEB. 2026. Thermal variability interacts with infection load and the evolution of host-parasite defense. bioRxiv. doi: 2026.07.20.739373. Target journal: *Philosophical Transactions of the Royal Society*.

In preparation: (manuscripts available upon request)

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

Cocciardi JM, Hoskin CJ, and Higgie M. Can interspecific competition drive rapid evolution of the thermal niche? A test using experimental evolution. *In prep* for *Proceedings of the National Academy of Sciences*.

Cocciardi JM, Stiles R, Bushell J, Minier D, Sammons S, Reinert L, Rollins-Smith L, Smith T, Lindauer A, Jenkinson T, Ohmer MEBO. Previous exposure to a fungal pathogen and its effect on thermal preference and survival in an endangered frog species. *In prep* for *Conservation Physiology*.

Cocciardi JM, Hoffman H*, Koltz A*, Moorman K*, and Ohmer MEB. Effects of Warming Events on the Critical Thermal Maximum of Southern Cricket Frogs (*Acris Gryllus).* Target journal: *Conservation Physiology*.

Other publications:

Cocciardi JM. 2025. Tranquilized but at risk: the conservation cost of rhino capture. *Conservation Physiology* 13(1): coaf053. doi: 10.1093/conphys/coaf053.

**Undergraduate mentees*

TEACHING

Spring 2027	*Upcoming*: Special Topics in Biology: Global Change Biology (**Instructor of Record**) University of Mississippi, Department of Biology, Oxford, MS
Fall 2026	BISC 580: Conservation Physiology (lecture and led class sessions with group discussions) University of Mississippi, Department of Biology, Oxford, MS
Fall 2025	BISC 580: Conservation Physiology (two lectures) University of Mississippi, Department of Biology, Oxford, MS
Spring 2025	BISC 568: Infectious Disease Ecology (led two class sessions with group discussions) University of Mississippi, Department of Biology, Oxford, MS
Fall 2024	BISC 580: Conservation Physiology (lecture) University of Mississippi, Department of Biology, Oxford, MS
Fall 2023	BISC 580: Conservation Physiology (lecture and led two class sessions with group discussions) University of Mississippi, Department of Biology, Oxford, MS
Spring 2024	BISC 330: Introductory Physiology (three lectures) University of Mississippi, Department of Biology, Oxford, MS
Spring 2022	Johns Hopkins Teaching Institute, The Teaching Academy
Spring 2017	BZ 3745/5740: Wildlife ecology and management (teaching and grading assistant) James Cook University, College of Science and Engineering, Townsville, QLD

RESEARCH MENTORING EXPERIENCE

Undergraduate students:

Current	*Marina Hall* (University of Mississippi)–advisor for undergraduate research project. *Project title*: "Measuring the Evolutionary Potential of Thermal Traits in Amphibians to Improve Conservation Under a Changing Climate." University of Mississippi **STAMPS Impact Prize Recipient 2026, $4000 USD.**
Current	*Marina Hall, Lewis Knotts, Hailey Smith* (University of Mississippi)–advisor for CURE project. *Project title*: "Validating thermal preference arenas for amphibians in the field." **Manuscript *in review* at *Journal of Thermal Biology***.
2025–current	*Anna Kang* (University of Mississippi)–advisor for undergraduate Minor Project and Seminar. *Project title*: "Investigating the impact of thermal microhabitats on disease dynamics." **Now a graduate student at Arizona State University, and continuing work on this project**.
2025	Jeanette Bantugan (University of Mississippi)–advisor for undergraduate Minor Project and Seminar.

Project title: "Uncovering microhabitat variability for vulnerable amphibians using FLIR photos."

2024–2025 *Audrey Koltz* (University of Mississippi)–advisor for undergraduate Honor's thesis. *Project title*: "Assisted reproductive technologies for amphibian conservation." University of Mississippi **STAMPS Impact Prize Recipient 2024, $4000 USD. Award for Excellent Oral Presentation in Ecology and Evolution** at the West Coast Biological Sciences Undergraduate Research Conference**.**

2024–2025 *Savannah Hicks* (University of Mississippi)–advisor for undergraduate Honor's thesis. *Project title*: "Comparing amphibian thermal performance curves: does the model change the result?"

2024–2025 *David Phillips* (University of Mississippi)–advisor for undergraduate Honor's thesis. *Project title*: "Designing an optimal thermal preference arena for juvenile frogs."

2024–2025 *Eleanor Briggs* (University of Mississippi)–advisor for undergraduate Honor's thesis. *Project title*: "Designing a rectangular thermal preference arena for climbing frogs."

2024 *Sadie Shulz* (University of Mississippi)–advisor for undergraduate Minor Project and Seminar. *Project title*: "Uncovering microhabitat variability for vulnerable amphibians using FLIR photos."

2023 *Hailey Hoffman, Audrey Koltz, Kat Moorman* (University of Mississippi)–advisor for CURE Project. *Project title*: "The effects of heatwaves on the thermal physiology of amphibians." **Manuscript *in prep* to submit to *Conservation Physiology***.

2018–2019 *Henry Stoetzel* (James Cook University)–advisor for undergraduate Minor Project and Seminar. *Project title*: "Effect of environmental variance on heritability of fitness traits." **Now a graduate student at the University of Queensland while also working at *Conservation Partners Australia***.

2016–2017 *Breanne Johnson* (James Cook University)–advisor for undergraduate Minor Project and Seminar. *Project title*: "Intraspecific competition stabilizes niche in experimental *Drosophila* populations."

INVITED PRESENTATIONS

Sept 2026 "Is there a 'silver-lining' to extreme events?" Conservation Physiology course lecture series. University of Mississippi, MS, USA

Nov 2025 "Linking ecology, evolution, and physiology to predict species resilience in a changing world." Department of Biology Seminar Series. University of Mississippi, MS, USA.

Sept 2025 "Is there a 'silver-lining' to extreme events?" Conservation Physiology course lecture series. University of Mississippi, MS, USA.

Feb 2025 "The effects of climate change and disease in endangered frog species." Disease Ecology course lecture series. University of Mississippi, MS, USA.

Nov 2024 "How are the dual stressors of climate change and disease affecting amphibians?" Disease Ecology course lecture series. Skidmore College, NY, USA.

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.

CONFERENCES AND WORKING GROUPS

Leadership

Jun 2025 Co-organized a symposium at the International Congress for Conservation Biology: "Diverse Perspectives in Conservation: Uniting Physiology, Innovative Modelling, and Transdisciplinary Approaches." Brisbane, Australia.

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

May 2022 Organized and co-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.

Working Groups, Collaborative Institutions, and Workshops

Oct 2024 **Invited** participant in three-day Research Coordination Network and working group on Urban Ecology and Evolutionary Biology. All expenses covered (travel, food, and lodging). University of Washington, Seattle, WA. USA.

Jan 2024	**Invited** participant in three-day working group on Urban Ecology and Evolutionary Biology. Virtual.
Nov 2023	**Invited** participant in three-day working group on Urban Genomics. All expenses covered (travel, food, and lodging). Johns Hopkins University, Baltimore, MD. USA.
Oct 2023	SEC Emerging Scholars Career Preparation Workshop. All expenses covered (travel, food, and lodging). University of Arkansas, AK. USA
Jul 2023	Genetic Analyses using ASReml-R, VSNI. Charlotte, NC. USA.
Aug 2022	**Invited** participant in week-long working group in Urban Ecology and Evolutionary Biology. All expenses covered (travel, food, and lodging). Sevilleta Long-term Ecological Research Site, New Mexico. USA.
Nov 2015	Mechanistic Models of Species' Distributions, Prof. Michael Kearney. Cairns, QLD. Australia.

Member of: Resilience Institute Bridging Biological Training and Research (RIBBiTR) (2022–current), Urban Eco-Evo Network (2024–current), Thermal Ecology Alliance (current)

Select Conference Presentations

Cocciardi JM, Walsman JC, Ohmer MEB, Wilber M. 2025. Incorporating the thermal biology of host–pathogen relationships into evolutionary rescue models. Amphibian Disease Meeting. Vanderbilt University, TN, USA.

Cocciardi JM, Stiles R, Bushell J, Minier D, Sammons S, Reinert L, Rollins-Smith L, Smith T, Lindauer A, Jenkinson T, Ohmer MEBO. 2025. Effects of immune priming on temperature preference and survival in an endangered frog species." International Congress on Conservation Biology. Brisbane, Australia.

Ohmer MEB, Zegar J, Anaya L, **Cocciardi JM**, Diele-Viegas L. 2025. Leveraging host physiology to understand the impact of a changing climate on amphibian resilience to disease. International Congress on Conservation Biology. Brisbane, Australia.

Koltz A*, **Cocciardi JM**, Ohmer MEB. 2025. Artificial reproductive technologies to improve amphibian conservation. 2025 West Coast Biological Sciences Undergraduate Research Conference. San Marcos, CA**.**

Koltz A*, **Cocciardi JM**, Ohmer MEB. 2024. Artificial reproductive technologies to improve amphibian conservation. Amphibian Disease Meeting, Nashville, TN.

Cocciardi JM, Hoskin C, Higgie M. Novel competition causes rapid adaptation of the thermal niche. 2024 Department of Biology Research mixer, University of Mississippi, Oxford, MS. USA.

Cocciardi JM, Stiles R, Bushell J, Minier D, Sammons S, Reinert L, Rollins-Smith L, Smith T, Lindauer A, Jenkinson T, Ohmer MEBO. 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.

Cocciardi JM, Hoskin C, Higgie M. 2022. Novel competition causes rapid adaptation of the thermal niche". Evolution and Long-term Ecology Working Group. Sevilleta, New Mexico, USA.

Cocciardi JM, Hoskin C, O'Brien E, Higgie M. 2019. Does surviving heatwaves future-proof populations? Evolution Conference. Providence, Rhode Island, USA.

Cocciardi JM, Hoskin C, Higgie M. 2018. What are the fundamental and preference niches of a rainforest generalist versus specialist? Second Joint Conference on Evolutionary Biology. Montpellier, France.

Finocchiaro M, Bologna P, Wu M, Evans S, **Cocciardi JM**. 2012. Potential for Eurasian milfoil (*Myriophyllum spicatum*) to invade New Jersey's estuaries. 57th New Jersey Academy of Science Meeting, Seton Hall University, South Orange, NJ.

Cocciardi JM, Finocchiaro M, Evan S, Wu M, Bologna P. 2012. The effects of non-native species introduction on benthic macroinvertebrate communities. 57th New Jersey Academy of Science Meeting, Seton Hall University, South Orange, NJ.

Cocciardi JM, Finocchiaro M, Evan S, Wu M, Bologna P. 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.

Finocchiaro M, Bologna P, Wu M, Evans S, **Cocciardi JM**. 2012. Potential for Eurasian milfoil (*Myriophyllum spicatum*) to invade New Jersey's estuaries. 41st Benthic Ecology Meeting, Norfolk, VI.

Finocchiaro M, Evans S, **Cocciardi JM**, Bologna P, Wu M. 2011. Effects of Eurasian Water Milfoil (*Myriophyllum spicatum*) on Benthic Macroinvertebrate Communities. 44th Annual Fall Conference of the Metropolitan Association of College and University Biologists, Seton Hall University, South Orange, NJ.

**Undergraduate presenter*

PROFESSIONAL SERVICE

2023–current Program Associate and Organizer for ARISE at the University of Mississippi (**A** **R**esearch **I**mmersive **STEM** **E**xperience): duties include organizing and conducting interviews, placement of participants with advisors, pre-program communication, daily and weekly communication throughout the program, organizing field trips and events, etc.

2025 Co-organized Symposium at the International Congress for Conservation Biology, Brisbane, Australia.

2022 Organized and co-led working group on evolutionary research at Long-Term Ecological Research Sites (LTERs). Sevilleta Long-term Ecological Research Site, New Mexico. USA.

- **Manuscript reviewer** for *Austral Ecology*, *Biological Conservation*, *Functional Ecology*, *Journal of Animal Ecology*, *Journal of Thermal Biology*, *Methods in Ecology and Evolution*
- **Scholarship/grant reviewer** for American Australian Association (2020–current), Smith Fellows Conservation Research Fellowship Program (2025)
- **Member of**: American Australian Association (2019–2021) • American Society of Naturalists (2017–2019, 2022, 2024, 2025) • Ecological Society of America (2011–2013) • Ecological Society of Australia (2016–2020) • Society for Conservation Biology (2025) • Society for the Study of Evolution (2017–2020, 2023–current)

OUTREACH EDUCATION

2025 ARISE at the University of Mississippi–Co-led a field excursion to the University of Mississippi Field Station, giving ARISE participants a tour and hands-on field experience.

2025 University of Mississippi–Spoke with middle school students about research in herpetology and ecology.

2023–current ARISE at the University of Mississippi–Support and engage with ARISE participants to ensure proper placement and engagement with program events and advisors.

2016–2019 Community Day, James Cook University–Organized and delivered interactive presentations on tropical ecology to elementary students.

2016–2019 Community Day, James Cook University–Organized and delivered interactive presentations on tropical ecology to high school students.

2014 Jamica Bay Terrapin Research Project, Hofstra University, NY–Assisted with monitoring populations of *Malaclemys terrapin*, a project led by Dr Russell Burke.

2009–2011 American Museum of Natural History, Live Exhibits Department, New York, NY–Delivered educational talks to elementary and middle school students in the Butterfly House.

2009–2011 New York Aquarium, Coney Island, NY–Maintained and cared for the sea mammals in the Sea Cliffs group.

2007–2008 Appalachian Trail Conservancy, Mid-Atlantic Regional Office, Boiling Springs, PA, US National Park Service–Managed and inspected trails in the Mid-Atlantic Region and to, trained and instructed hikers and volunteers on Leave-No-Trace Standards.

RELEVANT SKILLS

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

- Code and scripts available on GitHub: https://github.com/Jennycocciardi

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

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

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

Statistical methods: ASReml-R for 'animal models', mixed modeling, multivariate statistics, non-linear least square modeling, quantitative genetic modeling

OTHER PROFESSIONAL APPOINTMENTS

2016–2018 *Drosophila* laboratory research technician, James Cook University, Townsville, QLD, Australia.

2015 Vertebrate laboratory research technician, James Cook University, Townsville, QLD, Australia.

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

2011 Research technician, WildMetro Environmental Organization Intern, New York, NY.

2009	Ecological laboratory technician, PA Department of Environmental Protection Laboratory, Harrisburg, PA.