

Jenna M. McCullough

Curriculum Vitae

University of New Mexico, Department of Biology, Albuquerque, NM
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EDUCATION

- 2018– **University of New Mexico**, PhD, Biology (Expected graduation Spring 2023)
Provisional title: “*The evolutionary dynamics of a geographic radiation of island kingfishers (Todiramphus)*”
Advisor: Dr. Michael J. Andersen
- 2018 **University of New Mexico**, MSc, Biology
Thesis: *Systematics and Diversification of the Pantropical Avian Order Coraciiformes*
Advisor: Dr. Michael J. Andersen
- 2015 **University of Idaho**, BS, Biology
- 2015 **University of Idaho**, BS, Wildlife Resources

PROFESSIONAL EXPERIENCE

- 2016– Graduate Research, Curatorial, & Teaching Assistantships, University of New Mexico
- 2016 Laboratory Technician for Dr. Michael J. Andersen, University of New Mexico
- 2015 Curatorial Assistant, University of Washington Burke Museum
- 2014–2015 Laboratory Technician for Dr. David Tank, University of Idaho

PUBLICATIONS

[Google Scholar Profile](#)

(* indicates undergraduate mentee)

In review/revision:

20. **McCullough, JM**, C Oliveros, B Benz, R Zenil-Ferguson, J Cracraft, RG Moyle, & MJ Andersen. (*in review*) Wallacean and Melanesian islands promote higher rates of diversification within the global passerine radiation Corvides. *Systematic Biology*.
19. **McCullough, JM**, LH DeCicco, MW Herr, P Holland, D Pikacha, TH Lavery, KV Olson, DA DeRaad, IG Tigulu, XM Mapel, LB Klicka, R Famoo, J Hobete, L Runi, G Rusa, A Tippet, D Boseto, RM Brown, RG Moyle, & MJ Andersen. (*in review*). A survey of terrestrial vertebrates of Tetepare Island, Solomon Islands, including six new island records. *Check List*.

Phylogenetics & Genomics Publications:

18. **McCullough, JM**, EF Gyllenhaal, XM Mapel, L Joseph, & MJ Andersen. 2021. Taxonomic implications of recent molecular analyses of Spectacled (*Symposiachrus trivirgatus*) and Spotted (*S. guttula*) Monarch Flycatchers (Passeriformes: Monarchidae). *The Emu - Austral Ornithology*. DOI: 10.1080/01584197.2021.1977143
17. Andersen, MJ, **JM McCullough**, XM Mapel, EF Gyllenhaal, KA Jønsson, & L Joseph. 2021. Complex demographic histories and a mitochondrial capture event in a non-sister pair of monarch-flycatchers. *Molecular Ecology* DOI:10.1111/mec.15856
16. Eliason, C, **JM McCullough**, MJ Andersen, & S Hackett. 2021. Accelerated brain shape evolution is associated with rapid diversification in an avian radiation. *American Naturalist*. DOI: 10.1086/713664
15. Barrow, LN, SM Bauernfeind, PA Cruz, JL Williamson, DL Wiley, JE Ford, MJ Baumann, SS Brady, AN Chavez, CR Gadek, SC Galen, AB Johnson, XM Mapel, RA Marroquin-Flores, TE Martinez, **JM McCullough**, J McLaughlin, & CC Witt. 2021. Comparing complex communities

using null models: a case study of haemosporidian parasite variation among sky islands. *Oecologia*. DOI: 10.1007/s00442-021-04854-6

14. **McCullough, JM**, BT Smith, RG Moyle, & MJ Andersen. 2019. A North American origin of a pantropical bird radiation (Aves: Coraciiformes) is supported by genomic and fossil data. *Proceedings of the Royal Society B* 286(1910), 20190122
13. **McCullough, JM**, L Joseph, RG Moyle, & MJ Andersen. 2019. Ultraconserved elements put the final nail in the coffin of traditional use of the genus *Meliphaga* (Aves: Meliphagidae). *Zoologica Scripta* 48:411–418.
12. Andersen, MJ, **JM McCullough**, AS Nyári, RG Moyle, & L Joseph. 2019. Ultraconserved Elements resolve genus level relationships in an Australasian bird Radiation (Aves: Meliphagidae). *Emu* (Special Issue: New Guinea and Indo-pacific avifauna). DOI: 10.1080/01584197.2019.1595662
11. Andersen, MJ, **JM McCullough**, WM Mauck III, BT Smith, & RG Moyle. 2018. A phylogeny of kingfishers reveals an Indomalayan origin and elevated rates of diversification on oceanic islands. *Journal of Biogeography* 45(2):269–281.
10. Marroquin-Flores, RA, JL Williamson, AN Chavez, SM Bauernfeind, M Baumann, CR Gadek, AB Johnson, **JM McCullough**, CC Witt, & LN Barrow. 2017. Diversity, abundance, and host relationships in the avian malaria community of New Mexico pine forests. *PeerJ*:e3700

Ecology & Natural History Publications:

9. Guo*, TV, S Mosah, **JM McCullough**, D DeRaad, LH DeCicco, RG Moyle, & MJ Andersen. 2021. Detailed description of the nest, eggs, and juvenal plumage of the Solomons Nightjar (*Eurostopodus nigripennis*). *Wilson Journal of Ornithology*
8. Rice, AA, NT Vinciguerra, & **JM McCullough**. 2020. Early nest record and additional notes on the breeding biology of the Chestnut-capped Brush-finch (*Arremon brunneinucha suttoni*) in Southern Mexico. *Ornitología Neotropicalica* 31:76–78.
7. **McCullough, JM**, NT Vinciguerra, S Jallow, & JM Marks. 2020. First observations of allopreening in the Sennar Penduline-tit *Anthoscopus punctifrons*. *Bulletin of the African Bird Club* 27(2):258–259.
6. DeCicco, LH, LB Klicka, LC Campillo, IG Tigulu, J Waihuru, R Tako, A Sirikolo, XM Mapel, **JM McCullough**, MJ Andersen, & RG Moyle. 2020. New distributional records of the Blue-faced Parrotfinch (*Erythrura trichroa*) in the Solomon Islands. *Wilson Journal of Ornithology* 132(1):192–197.
5. DeCicco, LH, SS Brady, XM Mapel, **JM McCullough**, IG Tigulu, MJ Andersen, & RG Moyle. 2019. Notes on the birds of Isabel, Solomon Islands, including the first record since 1927 of Island Leaf Warbler *Phylloscopus maforensis*. *Bulletin of the British Ornithologists' Club* 139(4):311–319.
4. **McCullough, JM**, W Feuerabendt, & G Londoño. 2019. Additional notes on the nesting biology of the Blackish Tapaculo (*Scytalopus latrans*). *Wilson Journal of Ornithology* 131(4):817–824
3. **McCullough, JM**, & G. Londoño. 2017. Nesting biology of the Black-throated Tody-tyrant (*Hemitriccus granadensis*) with notes on mating displays. *Wilson Journal of Ornithology* 129(4):819–825.
2. **McCullough, JM**, & C Conway. 2017. Breeding behavior of Northern Saw-whet Owls in Oregon. *Northwest Science* 91(2):222–227.
1. Marks, JS, A Nightingale, & **JM McCullough**. 2015. On the breeding biology of Northern Saw-whet owls (*Aegolius acadicus*). *Journal of Raptor Research* 49(4):486–497.

RESEARCH FUNDING (TO DATE: \$24,670)

2021 **National Science Foundation (NSF) DEB** – Evolutionary Processes grant # 2112467: \$1,363,987. “Collaborative Research: Genomics of speciation and evolution of ecological traits in a geographic radiation of island kingfishers.” While not a PI, I contributed significantly to ideas and

writing at all stages; I am the singular named PhD student whose entire dissertation research and stipend (6 semesters) is supported by this award.

- 2021 American Museum of Natural History Frank Chapman Research Grant (\$3,000)
- 2021 UNM Biology Department: Alvin R. and Caroline G. Grove Research Award (\$2,000)
- 2020 UNM Biology Department: Alvin R. and Caroline G. Grove Research Award (\$500)
- 2020 UNM Biology Department: Melinda Bealmer Memorial Scholarship (\$500)
- 2020 UNM Biology Department: Richard B. Forbes Conservation Award (\$2,000)
- 2020 American Ornithological Society Werner and Hildegard Hesse Research Award (\$2,500)
- 2020 British Ornithologists' Union Small Ornithological Research Grant (\$2,080)
- 2018 UNM Biology Department: Alvin R. and Caroline G. Grove Research Award (\$1,700)
- 2017 American Museum of Natural History Chapman Collection Study Grant (\$1,200)
- 2017 Society of Systematic Biologists Graduate Student Research Award (\$1,300)
- 2017 UNM Graduate Resources Allocations Committee Research Award (\$400)
- 2017 UNM Biology Department: Alvin R. and Caroline G. Grove Research Award (\$2,700)
- 2017 Wilson Ornithological Society Student Research Grant (\$1,500)
- 2016 Experiment.com crowd-funding campaign (\$1,400)
- 2014 University of Idaho: Berklund Undergraduate Research Scholar Award (\$1,790)

CONFERENCE TRAVEL FUNDING (TO DATE: \$2,100)

- 2018 UNM Graduate Resources Allocations Committee Travel Award (\$150)
- 2018 American Ornithological Society Conference Travel Award (\$1,100)
- 2017 American Ornithological Society Conference Travel Award (\$700)
- 2017 UNM Graduate Resources Allocations Committee Travel Award (\$150)

FIELD WORK

Collection-based Expeditions: I have extensive experience with avian specimen preparation and have participated in one domestic and two international specimen collecting expeditions. I have personally prepared >650 avian specimens housed in multiple collections: MSB, UWBM, KUNHM, and SDNHM.

- 2019 **Solomon Islands.** Expedition to Rendova, Tetepare, and Kolombangara Islands.
- 2018 **Solomon Islands.** Expedition to Isabel and Makira Islands.
- 2017 **New Mexico, USA.** Collecting in mountainous regions of northern New Mexico.

Ecology fieldwork

- 2015 **Colombia.** Studying breeding biology of Neotropical birds in Farallones de Cali NP.
PI: Dr. Gustavo Londoño
- 2014 **Idaho.** Fall bird banding at the Intermountain Bird Observatory, Boise State University.
PI: Dr. Jay Carlisle
- 2014 **Idaho.** Radio telemetry and tracking of Sage Grouse outside of Twin Falls.
PI: Dr. Courtney Conway
- 2014 **Utah.** Bird banding at the Rio Mesa Research Station, University of Utah
Lead Bander: Laura Doll
- 2013 **Idaho.** Fall bird banding at the Intermountain Bird Observatory, Boise State University.
PI: Dr. Jay Carlisle
- 2013 **Utah.** Kit Fox and Coyote genetic sampling and diet analysis.
PI: Dr. Robert Lonsinger
- 2012 **Idaho.** Bleak Taylor Internship studying vocal behavior of owls in the Frank Church Wilderness Area. *PI: Dr. Courtney Conway*
- 2012–2015 **Oregon.** Studying breeding biology of Northern Saw-whet owls in Boardman.
PI: Drs. Courtney Conway and Jeff Marks

TECHNICAL NON-PEER-REVIEWED WRITING

- 2019 **McCullough, JM**, LH DeCicco, M Herr, P Holland, D Pikacha, K Olson, RG Moyle, & MJ Andersen. Survey of the Diversity of Terrestrial Vertebrate Animals of Tetepare, Solomon Islands. Submitted to the Ministry of Environment, Climate Change, and Disaster Management, Solomon Islands.
- 2018 DeCicco, LH, SS Brady, XM Mapel, **JM McCullough**, K Olson, D Pikacha, S Travers, IG Tigulu, MJ Andersen, & RG Moyle. 2018. Survey of the Diversity of Terrestrial Vertebrate Animals of the Solomon Islands, report on a survey of Isabel Island. Submitted to the Ministry of Environment, Climate Change, and Disaster Management, Solomon Islands.
- 2018 DeCicco, LH, SS Brady, XM Mapel, **JM McCullough**, K Olson, D Pikacha, S Travers, IG Tigulu, MJ Andersen, & RG Moyle. 2018. Survey of the Diversity of Terrestrial Vertebrate Animals of the Solomon Islands, report on a survey of Makira Island. Submitted to the Ministry of Environment, Climate Change, and Disaster Management, Solomon Islands.
- 2012 Nightingale, A, J Marks, **JM McCullough**, & C Conway. 2012. Northern Saw-whet owl monitoring on Boardman Tree Farm: 2012 Annual Report.

TEACHING AND MENTORSHIP

TEACHING

As a graduate student, I've developed and led graduate level courses that are aimed at improving graduate student skills in the Biology Department at the University of New Mexico (marked by a *). These two courses are aimed at grass-roots teaching by and for graduate students. As an undergraduate and graduate teaching assistant, I have taught several organismal biology courses at UNM and the University of Idaho.

*Course taught as an Undergrad TA **Course taught as a Grad TA ***Course I developed †Instructor of Record

University of New Mexico

2020**	BIOL 406 Global Avian Diversity and Systematics (20 undergrad students)
2020***,†	BIOL 502 Graduate Student Professional Development (15 grad students)
2019***,†	BIOL 502 Advanced R Seminar (15 grad students)
2018	BIOL 519 Phylogenetics; Guest Lab lecture (20 undergrad/grad students)
2017– †	BIOL 402/502 Biology Dep. BioBlog (2–8 undergrad students each semester)
2016**	BIOL 124L Intro Biology for Health Sciences (66 undergrad students)

University of Idaho

2015*	BIOL 102 Biology and Society (~24 undergrad students)
2013*	FOR 320 Dendrology (30 undergraduate students)
2013–2014*	BIOL 115 Cells and the Evolution of Life (~24 undergrad students each semester)
2012–2013*	BIOL 116 Organisms and Environments (~24 undergrad students each semester)

MENTORSHIP

- 2021 – **Colin Peña**, undergraduate student at UNM: I am currently mentoring Colin on ecological niche modeling of *Todiramphus* kingfishers.
- 2016–2017 **Xena M. Mapel**, undergraduate student at UNM: I mentored Xena on genomic methods in the Andersen Lab. This has led to several publications for which I am not a co-author. Xena entered graduate school at UNM for her masters' in 2018 and began a PhD at ETH, Zürich, Switzerland in 2020.
- 2019–2020 **Tina V. Guo**, undergraduate student at UNM: I mentored Tina with her first peer-reviewed publication (currently in prep) on the breeding biology of a vulnerable bird species, the Solomons Nightjar, during fieldwork in the Solomon Islands in 2019. At UNM, I worked with her on the publication process, graduate school applications, and South Pacific bird identification.

CONFERENCE ABSTRACTS AND PRESENTATIONS

(* indicates that I presented this work)

- *11. **McCullough, JM**, XM Mapel, EF Gyllenhaal, K Jønsson, L Joseph, & M Andersen. Robbery in progress: ongoing mitochondrial capture in an Australian population of the Spectacled Monarch *Symposiachrus trivirgatus*. Systematic Biology, January 2020. Contributing oral presentation.
- *10. **McCullough, JM**, RG Moyle, BT Smith, & MJ Andersen. Biogeography of the pantropical order Coraciiformes. International Ornithological Congress, August 2018. Contributed oral and poster presentations.
- *9. **McCullough, JM**, RG Moyle, BT Smith, & MJ Andersen. Biogeography of the avian order Coraciiformes. American Ornithology 2018 Conference, April 2018. Contributed oral presentation. *Session moderator*.
8. Spellman, GM, N Najjar, **JM McCullough**, L Benedict, and MJ Andersen. Origin and evolution of the extinct San Benedicto Island Rock Wren (*Salpinctes obsoletus exsul*) revealed by phylogeographic analysis of genome-wide variation. American Ornithological Society Annual Meeting, April 2018. Contributed Oral Paper.
7. Witt, CW, EJ Beckman, AC Chavez, **JM McCullough**, MJ Andersen, and JF Storz. Hemoglobin evolution across elevational transitions in the phylogeny of the dislossine tanagers. American Ornithological Society Annual Meeting, April 2018. Contributed Oral Paper.
- *6. **McCullough, JM**, MJ Andersen, NR Friedman, L Joseph, AT Peterson, RG Moyle, & AS Nyari. Ultraconserved elements resolve genus-level relationships in the honeyeaters (Meliphagidae). American Ornithology 2018 Conference, April 2018. Contributed oral presentation. *Session Moderator*.
- *5. **McCullough, JM**, WM Mauck III, RG Moyle, BT Smith, and MJ Andersen. Systematics of the pantropical avian order Coraciiformes. American Ornithology, August 2017. Contributed oral presentation.
- *4. **McCullough, JM**, RG Moyle, BT Smith, and MJ Andersen. Systematics of the avian order Coraciiformes. New Mexico Ornithological Society 2018 meeting, March 2018. Contributed oral presentation.
- *3. **McCullough, JM**, and G Londoño. Nesting biology of the Black-throated Tody-tyrant (*Hemitriccus granadensis*) with notes on mating displays. North American Ornithological Conference, Washington D.C., August 2016. Contributed poster presentation.
2. Andersen, MJ, **JM McCullough**, WM Mauck III, BT Smith, B. T., and RG Moyle. Phylogeny and biogeography of kingfishers. North American Ornithological Conference, Washington, DC, August 2016. Contributed oral paper.
- *1. **McCullough, JM**, JS Marks, A Nightingale. On the breeding biology of Northern Saw-Whet owls (*Aegolius acadicus*). The Wildlife Society Western Wildlife Student Conclave, March 2015. Contributed poster presentation.

INVITED PRESENTATIONS

- 2021 April 28: "How to prevent Salmonellosis at bird feeders," webinar for the Wild Bird Feeding Institute
- 2021 November 12: "Diseases that impact feeder bird species," hour-long presentation at the Wild Bird Feeding 2021 Annual Meeting in Lost Pines Resort, Austin, TX

POPULAR WRITING AND OUTREACH

Avian mortality event in the Southwest, September 2020: I wrote an online article, titled "[*The data behind mysterious bird deaths in New Mexico*](#)" for the American Birding Association's Field Ornithology on September 18th, 2020. I documented and discussed explanations behind the September 2020 avian mortality event in New Mexico and Colorado. As of October 19th, 2020, it has received 70,000 views and garnered considerable attention from media outlets at the local, national, and international stage. As a result of this story, I have been interviewed/quoted by 15 outlets, including the [Albuquerque Journal](#),

Denver Post, New York Times, NPR, and a television interview for CBS Saturday Morning (air date October 24th, 2020).

Other written contributions

- 2021 **McCullough, JM.** "CATastrophic effects of free-roaming felines" UNM BioBlog
2020 **McCullough, JM.** "Crabs, birds, and blue blood" UNM BioBlog
2020 **McCullough, JM.** "Documenting the natural history of a secretive Neotropical bird" Gradientes Colombia Blog
2019 Contributed figure to *Kingfisher* book by Ildiko Szabo. Published by Reaction Books LTD
2019 **McCullough, JM.** "Will history repeat itself?" UNM BioBlog
2019 **McCullough, JM.** "The not so special 'hot duck'" UNM BioBlog
2018 **McCullough, JM.** "Predatory Songbirds: the case of the murderous tits" UNM BioBlog
2017 **McCullough, JM.** "Feathered Dinosaurs" UNM BioBlog

Educational outreach

- 2021 Guest lecturer about molecular systematics and taxonomy of birds, 5th–6th grades, ACES Public Charter School, Albuquerque, NM.
2021 Guest lecturer for two classes on avian conservation and climate change, 8th–9th grades, South Valley Prep Charter School & Mountain Mahogany Charter School, Albuquerque, NM.
2019 Presented to students about how to explore a career in biology, 9th grade, Mission Achievement and Success Charter School, Albuquerque, NM
2013 Spoke to three classes of TRIO students about how to be successful during their Bachelor's degrees. Borah High School, Boise, ID

INDUSTRY EXPERIENCE

2021– Academic Consultant for the Wild Bird Feeding Institute

SERVICE

American Birding Association

- 2020– Associate Editor of *North American Birds* Magazine
2020– Technical Reviewer for Special Issues of *Birding* Magazine

University of New Mexico

- 2020 Graduate Policy Chair, Biology Graduate Student Association
2018–2020 Co-president, Biology Graduate Student Association
2018–2019 Faculty Hire Search Committee (Bioinformaticist), student representative
2019 Research Day Chair, Biology Graduate Student Association
2017– Secretary, Advancing Women in Science, University of New Mexico

University of Idaho

- 2012–2014 President, Student Chapter of the Wildlife Society

Professional Societies

- 2018– Student Association Committee member, American Ornithological Society

Society memberships

American Ornithological Society, International Ornithologist's Union, Society for Integrative and Comparative Biology, Society of Systematic Biologists, Wilson Ornithological Society

Peer review

Systematic Biology (2), Canadian Field Naturalist (1), Molecular Ecology Resources (1), Paleobiology (1), Journal of Field Ornithology (1)

HONORS AND AWARDS

2017 American Ornithology Society Student Membership Award
2015 Outstanding Senior Award, University of Idaho
2014 Outstanding Junior Award, University of Idaho