

Ethan F. Gyllenhaal

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University of New Mexico

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EDUCATION

- Present **Ph.D student, Biology**
Department of Biology, University of New Mexico
Advisor: Michael J. Andersen
- 2017 **B.S., Ecology and Evolutionary Biology**; minor in Computer Science
Department of Biology, University of Rochester
Advisor: Christian Rabeling

PROFESSIONAL EXPERIENCE

- 2021 Teaching Assistant, Anatomy and Physiology, Department of Biology, University of New Mexico
- 2021 Graduate Assistant, Center for Advanced Research Computer, University of New Mexico
- 2020 Graduate Curatorial Assistant, Bird Division, Museum of Southwestern Biology
- 2018–2020 NSF Graduate Research Fellow, University of New Mexico
- 2015–2017 Student Supervisor, Event and Classroom Management, University of Rochester
- 2015 Field Technician, Smithsonian Migratory Bird Center
- 2013–2014 Research Assistant, Field Museum of Natural History (summers only)
- 2012–2018 Volunteer Bird Preparator, Field Museum of Natural History (intermittent)

PEER-REVIEWED PUBLICATIONS

*Co-first authors

5. McCullough JM, **Gyllenhaal EF**, Mapel XM, Joseph L, Andersen MJ. Species limits of island birds are not black-and-white: a case study in pied monarchs (*Symphoricarpos*) and implications of hybrid populations in avian taxonomy. *Accepted, Emu*.
4. Williamson, JL*, **Gyllenhaal, EF***, Oliver, KD, Brady, SS, Johnson, AB, Michelsohn, MJ, & Andersen, MJ (2021). Predictable outcomes of warbler hybridization: Synthesis and an exceptional Yellow × Black-throated Blue Warbler (*Setophaga petechia* × *S. caerulea*) pairing. *The Wilson Journal of Ornithology*. ([Link](#))

3. Andersen, MJ, McCullough, JM, **Gyllenhaal, EF**, Mapel, XM, Haryoko, T, Jønsson, KA, & Joseph, L (2021). Complex histories of gene flow and a mitochondrial capture event in a nonsister pair of birds. *Molecular Ecology*, 30(9), 2087–2103. ([Link](#))
2. Mapel XM*, **Gyllenhaal EF***, Modak TH, DeCicco LH, Naikatini A, Utzurum RB, Seamon JO, Cibois A, Thibault J, Sorenson MD, Moyle RG, Barrow LN, Andersen MJ (2020). Inter- and intra-archipelago dynamics of population structure and gene flow in a Polynesian bird. *Molecular Phylogenetics and Evolution*, 156, 107034. ([Link](#))
1. **Gyllenhaal EF**, Mapel XM, Naikatini A, Moyle RG, & Andersen MJ (2020). A test of island biogeographic theory applied to estimates of gene flow in a Fijian bird is largely consistent with neutral expectations. *Molecular Ecology*, 29(21), 4059-4073. ([Link](#))

GRANTS AND FELLOWSHIPS

Research grants and fellowships

- 2021 Grove Research Scholarship, University of New Mexico (\$2,000)
- 2021 American Ornithological Society Research Award (\$2,500)
- 2021 Student Research Grant, University of New Mexico (\$500)
- 2020 Graduate Research Fellowship Additional Funding (\$686)
- 2019 Graduate Research Fellowship Additional Funding (\$1,234)
- 2019 New Mexico Ornithological Society Research Grant (\$1,000)
- 2019-2021 Biology Graduate Research Grant, University of New Mexico (\$400) X 2
- 2018 The National Science Foundation's Graduate Research Fellowship (\$102,000)
- 2013 Research and Innovation Grant, University of Rochester (\$3,000)

Travel funding

- 2019 University of New Mexico Doctoral Travel Award (\$1,200)

Co-written grants

- 2019 Share With Wildlife, New Mexico Department of Game and Fish (\$10,500; Christopher Witt and Andrew Johnson lead PIs)

TEACHING EXPERIENCE

Teaching Assistant

- 2021 Anatomy and Physiology 2 (BIOL 2225), Graduate TA, University of New Mexico
- 2016 Animal Behavior (BIO 260), Undergraduate TA, University of Rochester

Workshop Leader

- 2019 R Population Genetics: Population Assignment and Tests for Admixture, University of New Mexico (Spring)
- R Population Genetics: Population Structure with sNMF and adegenet, University of New Mexico (Fall)

Computational Training

- 2020-2021 Personal training for graduate students (1 Masters, 1 PhD) using a tutorial of a parallelized variant-calling pipeline I developed ([Link](#))
- 2021 Training users on how to use high performance computing resources at the University of New Mexico during research assistantship (focus on Unix, Python, and common bioinformatic pipelines)

Guest Lecture

- 2018 Processing & analyzing UCE data, Phylogenetics, University of New Mexico

ADVISING AND MENTORING

- 2020-2021 **Colin Peña**, undergraduate researcher, University of New Mexico.
Museum preparation and data techniques; trained in preparing specimens for specific project.
- 2017-2018 **Jeffrey Coleman**, post-bac research, Field Museum of Natural History.
Wet lab techniques; trained in performing 96-well DNA extractions and PCR.

PRESENTATIONS

- 2021 **Gyllenhaal EF**, Klicka LB, DeCicco LH, Moyle RG, Andersen MJ. The Importance of Gene Flow in Archipelagos: Case study in a Pacific island flycatcher. American Ornithological Society Meeting, Virtual.
- 2021 **Gyllenhaal EF**, Klicka LB, DeCicco LH, Moyle RG, Andersen MJ. The Importance of Gene Flow in Archipelagos: Case study in a Pacific island flycatcher. Evolution, Virtual.
- 2021 **Gyllenhaal EF**. The Importance of Gene Flow in Archipelagos: Case study in a Pacific island flycatcher. Biology Research Day, University of New Mexico, Albuquerque, NM.
- 2020 **Gyllenhaal EF**. Crossing the Ocean: Gene Flow Between Sedentary Island Bird Populations. Brown Bag Seminar, University of New Mexico, Albuquerque, NM.
- 2020 **Gyllenhaal EF**, Mapel XM, McCullough JM, Naitakini A, Moyle RG, Andersen MJ. Crossing the Ocean: Gene Flow Between Sedentary Island Bird Populations. North American Ornithological Congress, Virtual.
- 2019 **Gyllenhaal EF**, Mapel XM, Andersen MJ. Asymmetric Gene Flow in an Understory Fijian Bird. American Ornithological Society Meeting, Anchorage, AK.
- 2019 **Gyllenhaal EF**, Mapel XM, Andersen MJ. Asymmetric Gene Flow in an Understory Fijian Bird. Biology Research Day, University of New Mexico, Albuquerque, NM.

PROGRAMMING EXPERIENCE

Python: Favored language, mostly used for scripts to manipulate genomic and ecological

data. Limited experience using Conda environments.

R: Often used to perform population genomic, phylogenetic, and other statistical analyses.

Shell: Experience writing shell scripts for processing genomic data, in addition to extensive command line usage and HPC job submission.

Java: Not currently used, took introductory programming and data structures courses in it.

C: Not currently used (but interested in getting back into it and C++), used in computation and formal systems course.

HTML/CSS: Rarely used, learned in web development course.

MATLAB: Not currently used, learned in engineering programming course.

PROFESSIONAL ACTIVITIES AND OUTREACH

Peer review

- 2021 Ecology and Evolution (1)
- 2021 G3 Genes| Genomes| Genetics (1)
- 2021 Conservation Genetics (1)
- 2020 Evolution (1, co-reviewer)
- 2020 Western Birds (1)
- 2019 Systematic Biology (1, co-reviewer)
- 2017 North American Bird Bander (1)

Grant review

- 2018–2020 UNM Biology Graduate Student Association Grants Program (12)

Positions Held

- 2021– UNM Biology Graduate Student Association Secretary
- 2021– UNM Biology Graduate Student Association Website Coordinator
- 2020 Museum of Southwestern Biology Open House Planning Committee
- 2019–2020 UNM Biology Graduate Student Association Grants Chair
- 2019–2021 Illinois Ornithological Society Grants Committee Member
- 2018–2021 Illinois Ornithological Society Board Member

Outreach

- 2019–2021 Presenter, Museum of Southwestern Biology Open House
- 2018 Volunteer outreach, Museum of Southwestern Biology
- 2018 Bird expert and mentor, Douglas 18 (youth outreach program)
- 2012–2018 Volunteer outreach, Field Museum of Natural History
- 2010–2018 Volunteer birding walk leader, Chicago Ornithological Society

HONORS AND AWARDS

- 2019 UNM Biology Research Day Honorable Mention for Best Graduate Student Talk
2013–2017 University of Rochester Dean's List (8 of 8 semesters)

FIELD EXPERIENCE

- 2020 **New Mexico:** Southwest corner, collecting (co-planner, 4 days)
2019–2020 **New Mexico:** Rio Grande Valley, hunter salvage (co-planner, 8 total days)
2018 **New Mexico:** Mount Taylor, collecting (assistant, 2 days)
2018 **Michigan:** Upper peninsula, collecting (assistant, 1 week)
2015 **Michigan:** Central lower peninsula, nest surveys (assistant, 2 months)
2012-2016 **Illinois:** Chicago suburbs, point counts (volunteer, 5 summers)

REFERENCES

Dr. Michael J. Andersen (advisor)

Assistant Professor, Department of Biology, University of New Mexico, Albuquerque, NM
Curator of Genomic Resources & Assistant Curator of Birds, Museum of Southwestern Biology
Email: mjandersen@unm.edu — Phone: 505-277-8017

Dr. Christopher C. Witt

Professor, Department of Biology, University of New Mexico, Albuquerque, NM
Curator of Birds & Director, Museum of Southwestern Biology
Email: cwitt@unm.edu — Phone: 505-918-7199

Dr. John M. Bates (past mentor)

Associate Curator of Birds and Head of Life Sciences, Field Museum of Natural History, Chicago, IL
Email: jbates@fieldmuseum.org — Phone: 312-665-7730