

# Paul J. Dougherty

NATIONAL SCIENCE FOUNDATION POSTDOCTORAL RESEARCH FELLOW

University of Massachusetts Amherst, 611 North Pleasant Street, Amherst, MA 01003

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## Education

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### University of Wyoming

Laramie, WY

PHD: ECOLOGY & EVOLUTIONARY BIOLOGY, MINOR: STATISTICS

August 2017 - December 2023

Advisor: Dr. Matthew Carling

### Colby College

Waterville, ME

BACHELOR OF ARTS: BIOLOGY (ECOLOGY & EVOLUTION CONCENTRATION) AND CLASSICS

August 2012 - May 2016

GPA: 3.74 (Dean's List, Cum Laude)

Honors thesis advisor: Dr. Herbert Wilson

## Publications

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### PEER REVIEWED

**Dougherty, PJ**, and MD Carling. 2024. Go west, young bunting: recent climate change drives rapid movement of a Great Plains hybrid zone. *Evolution*, qpae118.

Minor, NR\*, **PJ Dougherty\***, SA Taylor, and MD Carling. 2021. Estimating hybridization in the wild using community science data: a path forward. *Evolution*, 76(2): 362-372. *\*equal contribution*

**Dougherty, PJ** and WH Wilson Jr. 2018. Evidence for a relationship between the winter movements of the Common Redpoll (*Acanthis flammea*) and the American Goldfinch (*Spinus tristis*). *The Open Ornithology Journal*, 11: 1-26.

### IN REVISION

**Dougherty, PJ** and MD Carling. How to incorporate the full annual cycle when studying reproductive isolation and speciation.

### IN PREP

**Dougherty, PJ**, RS Terrill, and MD Carling. Exploring the role of a neglected aspect of natural history in conservation: does molt-migration put birds at risk?

**Dougherty, PJ**, SL Fossberg\*, and MD Carling. Adaptive divergence in molting behavior mediates reproductive isolation and speciation in birds. *\*mentored undergraduate*

### NON-PEER REVIEWED

**Dougherty, PJ**. 2023. The implications of adaptive variation in molting behavior for diversification in and conservation of North American passerines. University of Wyoming Dissertations and Theses.

**Dougherty, PJ**. 2016. Spatial and temporal patterns in irruptive Fringillid movements. Colby College Honors Theses. <https://digitalcommons.colby.edu/honorsthesis/822>

...**PJ Dougherty**...RA Gastaldo (10 authors). 2014. Conserving Maine's fossil heritage: the Trout Valley formation along Wadleigh Mountain Road, Scientific Forest Management Area. Report to the Baxter State Park Authority.

## Awards, Fellowships, & Grants

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### RESEARCH GRANTS

2023 **Postdoctoral Research Fellowship in Biology**, National Science Foundation

\$ 240,000

2021	<b>Margaret and Sam Kelly Ornithology Research Fund</b> , University of Wyoming	\$ 2,000
	<b>L. Floyd Clark Graduate Scholar Award</b> , University of Wyoming	\$ 2,000
	<b>Dr. George Menkens Memorial Scholarship</b> , University of Wyoming	\$ 10,000
2019	<b>Gardner and Fiske Physiology Graduate Research Award</b> , University of Wyoming	\$ 6,000
	<b>RC Lewontin Early Award</b> , Society for the Study of Evolution	\$ 2,000
	<b>Werner and Hildegard Hesse Award</b> , American Ornithological Society	\$ 2,000
2018	<b>Graduate Student Research Award</b> , Society of Systematic Biologists	\$ 1,000
	<b>Robert Berry Research Grant</b> , University of Wyoming	\$ 4,000
2017	<b>Small Grant</b> , Laramie Audubon Society	\$ 500
	<b>Berry Graduate Student Fellowship in Zoology</b> , University of Wyoming	\$ 28,000

#### OUTREACH GRANTS

2020	<b>Novel Outreach and Education Grant</b> , University of Wyoming Biodiversity Institute Wommack, EA, <b>PJ Dougherty</b> , R Ratigan, and MD Carling. The Art of Hybridization.	\$ 15,000
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#### OTHER AWARDS AND HONORS

2023	<b>Lanyon Award Finalist</b> , American Ornithological Society	
	<b>AOS Council Presentation Award</b> , American Ornithological Society	\$ 500
	<b>Detweiler Fellowship</b> , University of Wyoming School of Graduate Education (declined)	\$ 1,982
	<b>Student Travel Award</b> ), American Ornithological Society (declined)	\$ 727
2022	<b>Program in Ecology and Evolution Travel Grant</b> , University of Wyoming (also in 2019, 2018, and 2023 (declined)	\$ 500
	<b>Travel Grant</b> , Wyoming NASA EPSCoR	\$ 500
	<b>Student Travel Award</b> , American Ornithological Society	\$ 680
	<b>Best 15-Minute Talk</b> , University of Wyoming Program in Ecology and Evolution Symposium	
2021	<b>Runner-up</b> , Wyoming NASA Space Grant Graduate Research Fellowship	
2018	<b>1st President's Lifer List Winner</b> , American Ornithological Society	
2017	<b>Program in Ecology Augmentation Award</b> , University of Wyoming	\$ 5,000
2016	<b>Honors in Biology</b> , Colby College	
	<b>Distinction in Biology and Classics</b> , Colby College	
	<b>John B. Foster Prize in Classics</b> , Colby College	\$ 100
	<b>All-Academic Team</b> , New England Small College Athletic Conference (also in 2015, 2014)	
	<b>Steward's All-Academic Team</b> , Eastern College Athletic Conference (also in 2015, 2014)	
2015	<b>Griffin Metto '15 Prize in Classics</b> , Colby College	\$ 100

#### Presentations

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\* mentored undergraduate

#### INVITED

**Dougherty, PJ.** 2024. The implications of adaptive variation in molting strategy for diversification in and conservation of North American passerines. Oral Presentation: University of Massachusetts Amherst Department of Organismic and Evolutionary Biology Seminar Series, Amherst, MA.

#### CONFERENCE

**Dougherty, PJ**, SL Fossberg\*, and MD Carling. 2023. The influence of adaptive divergence in molting behavior on reproductive isolation and speciation in birds. Oral Presentation: American Ornithological Society, London, ON.

- Dougherty, PJ**, SL Fossberg\*, and MD Carling. 2023. Environmental context may mediate the influence of adaptive divergence on reproductive isolation. Oral Presentation: Society for the Study of Evolution, Albuquerque, NM.
- Dougherty, PJ** and MD Carling. 2023. Climate change and the North American Monsoon: implications for western passerines. Oral Presentation: the Wyoming Chapter of the Wildlife Society, Laramie, WY.
- Dougherty, PJ**, RS Terrill, and MD Carling. 2022. Climate change and the North American Monsoon: implications for western passerines. Oral Presentation: American Ornithological Society, San Juan, Puerto Rico.
- Dougherty, PJ** and MD Carling. 2021. The role of molt phenology divergence in maintaining reproductive isolation between taxa that hybridize in the Great Plains. Oral Presentation: American Ornithological Society, Virtual presentation.
- Dougherty, PJ** and MD Carling. 2020. The influence of the North American monsoon on breeding abundance of western molt migrants. Oral Presentation: North American Ornithological Conference, Virtual presentation.
- Dougherty, PJ**, SL Fossberg\*, and MD Carling. 2019. Using museum specimens to investigate fitness variation across avian hybrid zones. Oral presentation: American Ornithological Society, Anchorage, AK.
- Dougherty, PJ** and WH Wilson. 2018. Evidence for a relationship between the movements of boreal-breeding and temperate-breeding Fringillids. Oral presentation: American Ornithological Society. Tucson, AZ.

## OUTREACH

- Dougherty, PJ**. 2021. The Birds of Wyoming. Oral presentation: University of Wyoming Lab School Kindergarten Classes, Laramie, WY.
- Ratigan, R, EA Wommack, **PJ Dougherty**, and MD Carling. 2021. The Art of Hybridization. Oral presentation and Art Show: University of Wyoming Biodiversity Institute, Laramie, WY.
- Dougherty, PJ**. 2020. Why I spend all day thinking about birds. Oral presentation: University of Wyoming chapter of the Wildlife Society invited graduate student talk, Virtual presentation.
- Dougherty, PJ**. 2018. Reproductive isolation between hybridizing bird species; why are there still two buntings in the Great Plains? Oral presentation: Laramie Audubon Society, Laramie, WY.

## IN-HOUSE AND DEFENSES

- Dougherty, PJ**. 2023. The implications of adaptive variation in molting behavior for diversification in and conservation of North American passerines. Oral Presentation: University of Wyoming dissertation defense, Laramie, WY.
- Dougherty, PJ** and MD Carling. 2022. Climate change and the North American Monsoon: implications for western passerines. Oral presentation: University of Wyoming Program in Ecology and Evolution (PiEE) Symposium, Laramie, WY.
- Dougherty, PJ**. 2020. Molt, migration, and monsoons: revisiting the avian hybrid zones of the Great Plains. Oral Presentation: University of Wyoming dissertation proposal defense talk, Virtual presentation.
- Dougherty, PJ** and MD Carling. 2020. The role of life history divergence in maintaining effective reproductive isolation between hybridizing species. Oral presentation: University of Wyoming Program in Ecology (PiE) Symposium, Laramie, WY.
- Dougherty, PJ** and RP Olson. 2019. Using measurements of museum specimens to investigate variation in fitness across an avian hybrid zone. University of Wyoming Program in Ecology (PiE) Symposium, Laramie, WY.
- Dougherty, PJ**. 2018.  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  values characterize molting behavior of Lazuli Buntings. Poster: University of Wyoming Stable Isotope Ecology Poster Session, Laramie, WY.
- Dougherty, PJ**. 2017. Do differences in molt schedule or migratory orientation maintain divergence between hybridizing species? Oral presentation: University of Wyoming Department of Zoology & Physiology, FLaSH talks. Laramie, WY.
- Dougherty, PJ**. 2016. Spatial and temporal patterns in irruptive fringillid movements. Oral presentation: Colby College Liberal Arts Symposium, Biology Honors Theses. Waterville, ME.

## Teaching Experience

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### INSTRUCTOR OF RECORD

- Evolution Graduate Seminar (ORG & EVBI 618)**, Co-instructor, University of Massachusetts Amherst (Fall 2024)
- Ornithology (ZOO 4350/5350)**, University of Wyoming (Spring 2023)

## GRADUATE TEACHING ASSISTANT

**Ornithology (ZOO 4350/5350)**, University of Wyoming (Spring 2019, 2020, 2022)

**Animal Biology (LIFE 2022)**, University of Wyoming (Spring 2018)

**General Biology (LIFE 1010)**, University of Wyoming (Fall 2017)

## OTHER

**Biodiversity Lab General Assistant**, Colby College (Fall 2014 - Spring 2016)

**Latin Tutor**, Colby College (Fall 2014 - Spring 2016)

## Collections-Based Experience

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### University of Wyoming Museum of Vertebrates

*Laramie, WY*

#### CURATORIAL ASSISTANT

*2018 - 2023*

- Prepared birds as round skins, spread wings, and skeletons (total preps: 192)
- Helped to accession and catalog specimens in the ARCTOS database
- Assisted with collection efforts in the field
- Helped to prepare for and co-lead museum outreach events

## Other Professional Experience

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### WYOBIRD

*Laramie, WY*

#### TREE SWALLOW NEST BOX MONITORING LEADER

*Summer 2023*

- Organized and facilitated opportunities for undergraduate students to monitor nest boxes at Hutton Lake National Wildlife Refuge near Laramie, WY
- Instructed students on how to record nesting productivity data in the field and how to enter data into the Cornell Lab of Ornithology NestWatch database

### Birds of Maine Book Project

*Richmond, ME*

#### EDITING ASSISTANT

*Summer 2017*

- Composed and edited species accounts that now appear in a published comprehensive guide to the birds of Maine
- Arranged existing accounts to conform to a provided style guide, looked up missing references and occurrence records
- Wrote original accounts on the historic and current abundance of individual bird species in Maine by synthesizing existing literature and occurrence data reported by citizen scientists

### IUP Research Institute, Cornell Lab of Ornithology

*Indiana, PA; Ithaca, NY*

#### AVIAN FIELD TECHNICIAN

*Spring, Summer 2017*

- Surveyed breeding bird populations and plant regeneration in public and privately owned lands managed to create early successional forest habitat
- Worked closely with private landowners and public land managers to arrange survey visits and communicate results

### National Audubon Society, Project Puffin

*Bremen, ME*

#### SEABIRD RESEARCH ASSISTANT

*Summer 2014*

- Collected data on the demography and feeding behavior of seabird populations breeding in the Gulf of Maine
- Banded and took body measurements from tern and alcid chicks

### Tenacre Summer Programs

*Wellesley, MA*

#### NATURE AND SCIENCE ACTIVITY HEAD

*Summer 2016*

- Designed and carried out lessons exploring a variety of topics in science for children ages 3-12

### Massachusetts Audubon Society, Broadmoor Wildlife Sanctuary

*Natick, MA*

#### ENVIRONMENTAL EDUCATOR

*Summer 2012 - 2015*

- Designed and carried out activities related to natural history
- Oversaw the well-being of children ages 4-15

## Undergraduate Mentees and Trainees

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- 2024 **Erin Hess**, Avian Field Technician, University of Arizona  
2022 **Dylan Scherer**, Data Entry Assistant, University of Wyoming  
2021 - 2022 **Taylor Skiles**, Undergraduate Assistant, University of Wyoming  
2021 **Theresa Higgins**, Avian Field Technician, University of Wyoming  
2021 **Franke Franke**, Avian Field Technician, University of Wyoming  
2020 **Qingqing Yang**, Undergraduate Researcher, Colby College  
2020 **Nick Pineschi**, Undergraduate Assistant, University of Wyoming  
2019 - 2020 **Domonique Jones**, Undergraduate Researcher, University of Wyoming  
2019 **Ashley Townsend**, Avian Field Technician, University of Wyoming  
2019 **Ashlynn Ballard**, Avian Field Technician, University of Wyoming  
2019 - 2022 **Sydnie Fossberg**, Wyoming Research Scholar, University of Wyoming  
2018 **Daree Altergott**, Undergraduate Teaching Assistant, University of Wyoming

## Outreach & Service

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### **University of Wyoming Department of Zoology & Physiology**

*Laramie, WY*

GRADUATE STUDENT REPRESENTATIVE TO FACULTY MEETINGS

*Fall 2022*

### **eBird, Cornell Lab of Ornithology**

*Ithaca, NY*

REVIEWER (WYOMING, ALBANY AND CARBON COUNTIES)

*March 2022 - Present*

### **University of Wyoming Program in Ecology & Evolution**

*Laramie, WY*

STUDENT CO-PRESIDENT

*August 2021 - August 2022*

SYMPOSIUM COMMITTEE CO-CHAIR

*August 2020 - July 2021*

NEW GRADUATE STUDENT MENTOR

*September 2019 - 2022*

INVITED SPEAKER COMMITTEE CO-CHAIR

*March 2018 - July 2020*

OUTREACH COMMITTEE CO-CHAIR

*August 2018 - July 2019*

### **Laramie Audubon Society**

*Laramie, WY*

NEWSLETTER CHAIR, BOARD MEMBER

*Fall 2017 - Fall 2023*

### **Eastern Massachusetts National Wildlife Refuge Complex**

*Sudbury, MA*

BIRDING GUIDE

*Summer, Fall 2016*

### PEER REVIEW

Wader Study (1), Evolution (1), Avian Conservation & Ecology (3), Western Birds (1)

### GRANT REVIEW

Wilson Ornithological Society, Jed Burt Undergraduate Mentoring Grant (2024)

### PROFESSIONAL MEMBERSHIPS

American Ornithological Society, Society for the Study of Evolution, Society of Systematic Biologists, American Genetics Association