RACHEL FANELLI

EDUCATION

2021 • Queen's University

Master of Science in Biology

- ♠ Kingston, Ontario, Canada
- Thesis: Quantifying species-level responses to urbanization in North American birds
- 2016 University of Wyoming

Bachelor of Science in Biology

- **Q** Laramie, Wyoming, United States
- 2013 Laramie County Community College

Associate of Science (Biology)

Cheyenne, Wyoming, United States

PUBLICATIONS

 Estimates of species-level tolerance of urban habitat in North American birds

in prep

Fanelli, R.E., P.R. Martin, O.J. Robinson, and F. Bonier

A male Field Sparrow paired with a female Clay-colored Sparrow in southeastern Ontario

Ontario Birds. 2021 April; 32:2-14 Munim, S., **R.E. Fanelli**, and P.R. Martin

Cytoarchitectural characteristics associated with cognitive flexibility in raccoons

Journal of Comparative Neurology. 2021 October; 529:3375-3388

Jacob J., M. Kent, S. Benson-Amram, S. Herculano-Houzel,

M.A. Raghanti, E. Ploppert, J. Drake, B. Hindi, N.R. Natale, S. Daniels, R. Fanelli, A. Miller, T. Landis, A. Gilbert, S. Johnson, A. Lai, M. Hyer, A. Rzucidlo, C. Anchor, S. Gehrt, and K. Lambert

2019 • Behavioral flexibility of a generalist carnivore

Animal Cognition. 2019 May; 22:387-396.

Daniels, S.E., R.E. Fanelli, A. Gilbert, and S. Benson-Amram

CONTACT INFO

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□ Website

GitHub

ResearchGate

3 Google Scholar

☼ OSF

Orcid

SKILLS

Extensive experience trapping, tracking, sampling, marking, and processing biological samples from wildlife, and quantifying animal behaviors using ethograms

Experienced in statistical analysis and data processing and visualizations

Proficient in R, ArcGIS, ERDAS Image, Microsoft Suite (Word, Excel, PowerPoint, Outlook, Outlook 365), Html coding

This resume was made with the R package **pagedown**.

Last updated on 2022-02-08.

RESEARCH EXPERIENCE

2019-2021

Graduate Research Assistant

Queen's University

♥ Kingston, Ontario, Canada

- Used remote sensing data and fine-scale range-wide relative abundance estimates to quantify the urban tolerance of species using ArcGIS and R
- Captured songbirds using mist nets and Potter traps to band birds, take morphological measurements, and blood samples
- · Used playback calls to survey sites for birds
- · Conducted nest searches for ground-nesting and shrub-nesting species and monitored nests until birds fledged
- · Conducted vegetation surveys at bird capture sites

2014-2016

Undergraduate Research

University of Wyoming

Laramie, Wyoming, United States

- · Assessed the relationship between raccoon neophobia and problem-solving success using puzzle boxes
- · Reviewed video footage of raccoons from the puzzle box experiment and coded behaviors using an ethogram
- · Reviewed video footage of European Starlings engaging in exploratory tasks and coded behaviors for analyses

PROFESSIONAL EXPERIENCE

2022

Research Assistant

Bonier Lab at Queen's University

♥ Kingston, Ontario, Canada

- · Compiled avian biological, life history, and behavioral data for species of North American birds
- Processed fine-scale temperature and precipitation data in ArcGIS to create range-wide estimates of climatic breadth for avian species

2016-2019

Project Manager

University of Wyoming Raccoon Project

Laramie, Wyoming, United States

- Used live traps to capture wild raccoons and striped skunks; collected biological samples from animals (e.g., blood, fecal, hair) and processed and stored samples for diet, disease, and genetic analyses
- Used centrifuges to separate plasma from whole blood, prepared slides using whole blood smears, measured total plasma protein using a digital refractometer, and ensured samples were properly prepared for long-term storage
- Tracked VHF radio-collared raccoons, operated RFID data loggers, and maintained trail cameras to monitor wildlife activity
- Wrote applications and applied for university and state research permits and obtained permission from property owners to collect data on private property
- Trained undergraduate students to safely trap, handle, and track wild raccoons and skunks and oversaw independent undergraduate research projects
- Created a lab manual with information on capturing and immobilizing wild raccoons and skunks, and biological sample processing
- · Responsible for ordering supplies needed for trapping and sampling wildlife
- Organized and participated in educational and community outreach events to generate interest in local wildlife and to obtain permission to trap on private property

Laboratory Technician 2017-2018

Wyoming Game & Fish Department Wildlife Health Laboratory

Laramie, Wyoming, United States

- · Processed hunter-harvested ungulate tissue samples (lymph node and obex) using scales and ribolyzers before using an ELISA (enzyme-linked immunosorbent analysis) to test samples for the presence of chronic wasting disease (CWD) prior proteins
- · Reported results from ELISA tests to a state database where hunters could check the results from their samples and to provide the public with an updated map of CWD cases across the state
- · Used mapping software to assign coordinate data to every harvested sample that was processed for CWD before uploading test results to the state's database
- · Assisted with wildlife captures of large ungulates and collected and prepared biological samples from animals for statewide health surveys
- · Created agars and liquid media for testing bighorn sheep, elk, and deer biological samples for the presence of pathogenic bacterial colonies
- · Processed blood samples using centrifuges to separate plasma from whole blood for downstream brucellosis testing
- Followed standard operating procedures for running a variety of assays and to safely work in a BSL-2 lab

Field Assistant 2018

Avian malaria research

Grand Teton National Park, Wyoming, United States

· Used mist nets to capture Dark-eyed Juncos; collected blood samples from birds for microbial assays and used a respirometer chamber to measure resting and summit metabolic rates

Undergraduate Research Assistant 2014-2016

University of Wyoming Raccoon Project

Laramie, Wyoming, United States

- Trapped, tracked, and collected biological samples from wild raccoons
- · Used trail cameras to monitor sites for wildlife

Field Assistant 2016

Mating behavior of birds

Mindo Cloud Forest (Milpe Bird Sanctuary), Pichincha, Ecuador

· Captured Golden-winged Manakins using mist nets and conducted behavioral observations at lek sites to identify banded manakins during courtship displays

** TEACHING EXPERIENCE

Guest Lecturer 2022

Urbanization and Biodiversity

Queen's University, Kingston, Ontario

· Invited guest speaker for a lecture on methods for quantifying species responses to urban habitat

Mentor 2021-

2022 Honors thesis student

Queen's University, Kingston, Ontario

· Mentored an undergraduate student and assisted with data collection for their honors thesis research project

2021 **Teaching Assistant**

Animal Behaviour

Queen's University, Kingston, Ontario

· Assisted students design independent animal behavior research projects and graded student projects

Teaching Assistant 2021

Evolutionary Medicine

Queen's University, Kingston, Ontario

 Assisted students design impactful science communication projects on current topics in evolutionary medicine using various mediums (e.g., PowerPoint, YouTube, brochures, computer games, etc.) and marked student projects

Teaching Assistant 2020 Queen's University, Kingston, Ontario **Ecology** · Monitored course email, responded to student questions, and graded student assignments in a timely manner Teaching Assistant 2020 Fundamental of Biology Queen's University, Kingston, Ontario · Monitored course email and responded to student questions; acted as the point person between course instructors and students and ensured instructors were aware of student questions and feedback in a timely manner **Teaching Assistant** 2019 **Ecology** Queen's University, Kingston, Ontario Invited guest speaker for a lecture on methods in field ecology · Attended weekly lectures, answered student questions, and graded student quizzes · Lectured for labs on identifying birds, insects, and fish · Co-instructed lessons on bird identification and burying beetle ecology at Queen's University Biological Field Station **Guest lecturer** 2017 Principles of Animal Behavior University of Wyoming, Laramie, Wyoming · Invited guest speaker for a lecture on social learning in animals **Tutor** 2016 Principals of Animal Behavior University of Wyoming, Laramie, Wyoming · Held weekly meetings with an undergraduate student to review material presented in class lectures and develop effective study habits to succeed in the course **Undergraduate Teaching Assistant (Spring 2015 semester)** 2015 University of Wyoming, Laramie, Wyoming Animal Biology · Assisted a graduate student TA prepare experiments for weekly lab sections for a semester-long undergraduate animal biology course · Attended lab sections, weekly lab prep meetings, and assisted students and answered questions during labs RESEARCH PRESENTATIONS Quantifying species-level responses to urban habitat in North American birds 2022 Society for Integrative and Comparative Biology Conference (recorded talk) Virtual Fanelli, R.E., P.R. Martin, and F. Bonier Quantifying species-level responses to urbanization in birds 2021 Canadian Society for Ecology and Evolution Conference (recorded talk) Virtual Fanelli, R.E., P.R. Martin, and F. Bonier Raccoon Association Patterns and the Potential for Information Transmission 2017 The Wildlife Society-Wyoming Chapter Annual Conference (live talk) Jackson Hole, Wyoming Fanelli, R.E., L. Stanton, D.B. McDonald, and S. Benson-Amram **Raccoon Social Networks and Information Transmission** 2017 Animal Behavior Society Annual Conference (poster) Toronto, Ontario Fanelli, R.E., L. Stanton, D.B. McDonald, and S. Benson-Amram

2016		Learning about a local wildlife species with the University of Wyoming Racco Wyoming Citizen Science Conference (poster) Fanelli, R.E., and S. Benson-Amram	on Project ♦ Lander, Wyoming	
2016		Community outreach with the University of Wyoming Raccoon Project Laramie Audubon Society Conference (live talk) Fanelli, R.E. and L.A. Stanton	Q Laramie, Wyoming	
2016	•	Neophobic responses and problem-solving abilities of raccoons (<i>Procyon lotor</i>) in captivity Animal Behavior Society Annual Conference (poster) ☐ Columbia, Missouri ☐ Captivity ☐ Columbia, Missouri ☐ Captivity ☐ Columbia, Missouri ☐ Captivity ☐ Columbia, Missouri ☐ Captivity ☐ Columbia, Missouri ☐ Captivity ☐ Columbia, Missouri ☐ Captivity ☐ Columbia, Missouri ☐ Captivity ☐ Columbia, Missouri ☐ Captivity ☐ Columbia, Missouri ☐ Captivity ☐ Columbia, Missouri		
2016	•	An empirical analysis of the neophobic responses of captive raccoons (<i>Procyon lotor</i>) during a		
		problem-solving task UW Undergraduate Research Day (live talk) Fanelli, R.E., S.E. Daniels, and S. Benson-Amram	♀ Laramie, Wyoming	
2015	•	Personality and association patterns among individuals: two metrics for analyzing the innovation and spread of novel traits in a captive group of common starlings (<i>Sturnus vulgaris</i>) UW Undergraduate Research Day (live talk)		
		Fanelli, R.E. and S. Benson-Amram	♀ Laramie, Wyoming	
	\$	GRANTS, FELLOWSHIPS, & SCHOLARSHIPS		
2016	•	Research travel grant Wyoming NASA Space Grant Consortium	♀ University of Wyoming	
2016	•	Research outreach grant Laramie Audubon Society	♀ Laramie, Wyoming	
2016	•	Academic scholarship Fredrick E. Clements Scholarship in Ecology	♀ University of Wyoming	
2015- 2016		Research fellowship NSF Experimental Program to Stimulate Competitive Original Research Fellowship Research Project: Analyzing the neophobic responses of captive raccoons (<i>Procyon lotor</i>) du solving task	♥ University of Wyoming ring a novel problem-	
2015- 2016	•	Academic scholarship William Gill Scholarship	♀ University of Wyoming	
2015	•	Study-abroad scholarship International Programs Scholarship	♀ University of Wyoming	
2014- 2016		Academic scholarship Richardson Family Trust	♀ University of Wyoming	
2014		Study-abroad grant Dick and Lynn Cheney Study Abroad Grant	♀ University of Wyoming	
2014	•	Research fellowship NSF Experimental Program to Stimulate Competitive Original Research Fellowship Research Project: Social Network Analysis of a Captive Population of Common Starlings (Studies)	♥ University of Wyoming urnus vulgaris)	

2009-		Academic scholarship		
2014		Wyoming Hathaway Scholarship	University of Wyoming	
2009- 2011	•	Academic scholarship Wyoming Golden Eagles Scholarship	Laramie County Community College	
		OUTREACH		
2015- 2018		Co-presented lesson plans on animal behavior and cognition and led hands-on activities for students in grades ranging from pre-school to high school at yearly outreach events		
		Wyoming State Science Fair	♀ Laramie, Wyoming	
		Women in STEM	O Laramia Wyamina	
		AU 0 / 5 / 1 / 2 / 4 5	Q Laramie, Wyoming	
		Albany County Public Library Youth Program	♀ Laramie, Wyoming	
	•	East High School, Sophomore Biology	♀ Cheyenne, Wyoming	
		Laramie High School, AP Biology	♀ Laramie, Wyoming	
		Beitel Elementary School		
			Q Laramie, Wyoming	
		Organized a booth at a local farmer's market to engage with the public	and discuss the University	
		of Wyoming Raccoon Project's research goals Thursday Local Farmer's Market	♀ Laramie, Wyoming	
Apr 2017	•	Public presentation on the University of Wyoming Raccoon Project (UWRP) and how to participate		
		in UWRP community-science opportunities Izaak Walton League- Laramie Chapter	♀ Laramie, Wyoming	
	•	INTERVIEWS		
Dec 2019	•	HumaNature Podcast. Episode 32: Trash Bandits And Border Collies.		
Nov 2019	•	Right to Roam Podcast. Episode 50: Trash Pandas and Polecats. Affectionately of Course!		
Sep 2016	•	Open Spaces. From Pests To Puzzle Solvers, Scientists Study Laramie	's Raccoons.	