

CURRICULUM VITAE

JESSE A. LANEY

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EMPHASIS

I am a community ecologist interested in quantifying patterns of biodiversity and understanding the factors that shape the distributions and functional roles of taxa across landscapes. My research investigates how habitats, climate, resources, and community structure influence the niches of mammals and birds over gradients in space and time. By studying ecological and evolutionary patterns of diverse groups of animals across multiple spatial and temporal scales, my research aims to illuminate fundamental processes that regulate biodiversity to answer today's conservation and management challenges. I am also dedicated to teaching and mentoring the next generation of wildlife professionals and I actively lead projects to create and maintain safe spaces for at-risk individuals working in natural resource settings.

EDUCATION

- PhD Oregon State University, Dept. of Integrative Biology. Estimated completion: 2023
Dissertation Research: *Diversity and its Drivers from Deserts to Mountains: A Comparison Across Small Mammals and Songbirds in Space and Time*
Advisor: Dr. Rebecca Terry, **Committee:** Dr. Tiffany Garcia, Dr. Mark Novak, Dr. W. Douglas Robinson (Oregon State University), Dr. Rebecca Rowe (Univ. of New Hampshire)
- BSc 2017. Oregon State University, Fisheries and Wildlife Science, *Magna cum laude*
- AAS 2014. Mt. Hood Community College, Natural Resources Technology & Wildlife Resources
- AA 2003. Art Institute of Atlanta, Photographic Imaging

FELLOWSHIPS & GRANTS

- 2020 The Eppley Foundation for Research Support for Advanced Scientific Research, *co-author* (\$16,620)
- 2019 American Society of Mammalogists Grant-in-Aid of Research (\$1500)
- 2016 Systematics of Birds Teaching Fellowship, Dept. of Fisheries & Wildlife, OSU (\$500)

HONORS & AWARDS

- 2022 Excellence in Undergraduate Research Mentoring by a Graduate Student Award, OSU (\$1000)
- 2022 Integrative Biology Research Award, Dept. of Integrative Biology, OSU (\$400)
- 2021 Zoology Research Funds Award, Dept. of Integrative Biology, OSU (\$400)
- 2020 2020 Outstanding Paper in PALAIOS (Awarded for 2018 Terry *et al.* article)
- 2018 Achievement Rewards for College Scientists (ARCS) Foundation Scholar Award (\$18,000)
- 2017 Honorable Mention - National Science Foundation Graduate Research Fellowship Program
- 2017 Fritzell Diversity Award Scholarship, Dept. of Fisheries & Wildlife, OSU (\$2500)
- 2015 American Ornithologists' Union Student Membership Award
- 2014 Ford Family Foundation Restart Scholarship (\$43,300)
- 2013 Science Division Tuition Award, Mt. Hood Community College (\$1500)

PUBLICATIONS

- Laney J. A., Hallman T. A., Curtis J. R., Robinson W. D. 2021. The influence of rare birds on observer effort and subsequent rarity discovery in the American birdwatching community. *PeerJ*, 9:e10713.
- Terry, R. C., Laney, J. A., & Hay-Roe, S. H. 2018. Quantifying the Digestive Fingerprints of Predators on the Bones of Their Prey Using Scanning Electron Microscopy. *Palaios*, 33(11), 487-497.

RESEARCH EXPERIENCES & SCIENTIFIC EMPLOYMENT

- 2019 – 2023 **Dissertation Research: The Steens Mountain Resurvey Project**, Dept. of Integrative Biology, Oregon State Univ., Burke Museum of Natural History & Culture, U.S. BLM.
A multi-year benchmarking survey of small mammals and songbirds across the Steens Mountain/Alvord Desert system in the Northern Great Basin. Objectives include modeling temporal dynamics of small mammal occupancy across the elevational gradient of the region using historical records, museum specimens, and modern surveys; testing relationships between niche breadth and habitat in small mammal populations; investigating community response to a century of climatic and land-cover changes; and evaluating heterogeneity-diversity relationships in terms of functional diversity of disparate taxa across habitats and elevation. Included field and laboratory preparation of over 800 small mammal voucher specimens and thousands of plant, arthropod, and mammal tissue samples. I have introduced 9 field assistants to small-mammal ecology fieldwork during this project and mentored 13 assistants in the laboratory, including mentorship of 6 undergraduate field internships and two undergraduate research projects.
- 2020 – 2023 **Dissertation Research: N.A. Passerine Biodiversity Dimensionality**, Dept. of Integrative Biology, Oregon State University.
Dissertation chapter exploring the covariation of multiple dimensions of biodiversity of all naturally occurring passerines across North America Bird Conservation Regions. Goals include uncovering links between diversity and underlying variation in climate, topography, and patterns of songbird seasonality using species ranges and remotely sensed datasets.
- 2018 – 2023 **Curatorial Research Assistant**, Dept. of Integrative Biology, Oregon State University
Catalogued and maintained bird, mammal, herpetological, and fishes teaching collections. Supervised 3 undergraduates in collection inventory, database management, and specimen taxonomy updates. Upkept fluid specimens. Duties also included moving the vertebrate and invertebrate teaching collections during building renovations in 2022. Inventoried Art Boucot paleontological collection for Smithsonian Institution repatriation.
- 2017 – 2020 **Post-Baccalaureate Research: Investigating the Patagonia Picnic Table Effect**, Dept. of Fisheries & Wildlife, Oregon State University. Advisor: Prof. W. Douglas Robinson.
Modeled birdwatcher behavior and subsequent rarity discovery during rare bird sightings using eBird data and geospatial datasets.
- 2016 – 2018 **Lab Manager, Research Staff**, Terry Lab, Dept. of Integrative Biology, Oregon State Univ.
Produced micrographs and quantified microscopic digestive fissures in cortical bone on modern and paleontological specimens using scanning electron microscopy. Prepared biological specimens for stable isotope analysis. Decalcification and collagen extraction using cortical bone samples. ID of small mammal remains from raptor pellets and mammalian scats using cranio-dental morphology and osteological measurements. ID and sorting of fossils from paleontological research sites. Curated collection for PelletMap Project, a K-12 and higher education partnership reconstructing mammal communities from owl pellets. Database management. Curated lab vertebrate collection. Prepared fossil plaster jackets. Drafted manuscripts. Website and poster design. Lab inventory. Managed lab personnel and scheduling (3 graduate students, 1 postdoctoral scholar, 5 undergraduates), equipment maintenance, managed chemical safety compliance.
- 2015 – 2018 **Avian Point Count Technician, Data Technician**, Oregon 2020 Project, Dept. Of Fisheries & Wildlife, Oregon State University. Advisor: Prof. W. Douglas Robinson.
Visual and auditory stationary avian point counts surveys in various backcountry habitats and field conditions across the state. Audio-playback owl surveys. Database management.

- 2016 **Avian Point Count Technician**, Malheur National Wildlife Refuge, U.S. Fish and Wildlife Service, Friends of Malheur National Wildlife Refuge
 Conducted visual and auditory avian point count surveys of waterfowl, broods, and other water birds in marsh impoundments at Malheur NWR including classification of waterfowl broods by age-class. Conducted nocturnal duck and geese capture using airboats and nets. Banded waterfowl using techniques to determine age, sex, and species of individual birds. Deployed and retrieved D500X Ultrasound Recorders for the North American Bat Monitoring Program. Conducted surveys of showy milkweed and Monarch Butterflies including determination of caterpillar instar stage. Conducted emergent vegetation surveys in marsh impoundments using canoes. Database management and data entry to Avian Knowledge Network. Followed survey protocols in the Malheur NWR Comprehensive Conservation Plan. Assisted with upkeep of Malheur Field Station.
- 2013 – 2014 **Wildlife Technician**, Aviation Wildlife Hazard Management Program, Port of Portland
 Trapped and banded raptors on airfield and relocated to wildlife rehabilitation centers and wildlife refuges. Conducted visual and auditory avian point count surveys. Breeding Streaked Horned Lark transect surveys. Nest search surveys. Small mammal trapping, measurements, and necropsies. Trapped and removed European Starlings while releasing non-target species. Monitored wildlife activity, collected field data, and assessed aviation threats in high level security clearance areas on Port of Portland airfields, including Portland International Airport. Operated vehicles in aircraft movement areas and used wildlife hazing equipment such as pyrotechnics to disperse avian threats to aircraft. Collected bird strike samples. Database management. Oral presentations.

Scientific working group participation

- 2019 – 2023 **NARLEE: North American Rodents – Landscapes, Ecology & Evolution**
 PI: Catherine Badgley, University of Michigan.
March 2022 – Working Group Research Talk: The Steens Mountain Resurvey Project Update
May 2019 - Field Trip Participant, NSF-funded NARLEE RCN, Guide to the Western
 Transect: 30 million years $\pm$ 2 kilometers

PROFESSIONAL MEETING PRESENTATIONS * denotes undergraduate mentee of J.A. Laney

- 2022 **Laney, J. A.**, Young, C. R.*, Renfro, S. L., Terry, R. C. 2022. Testing relationships among isotopic niche breadth, habitat structural complexity and functional divergence in sympatric rodents. *American Society of Mammalogists Annual Meeting*, Tucson, AZ.
- 2020 **Laney, J. A.**, Hallman, T. A., Curtis, J. C., & Robinson, W.D. 2020. Myth-Busting the Patagonia Picnic Table Effect. *Willamette Valley Bird Symposium*. Corvallis, OR.
- 2018 **Laney, J. A.**, Hay-Roe, S.H., and Terry, R. C. Who ate these bones? Quantifying the digestive fingerprints of raptors and other predators on the bones of their prey using scanning electron microscopy. *Research Advances in Fisheries, Wildlife, and Ecology Symposium*. Corvallis, OR.
- 2018 **Laney, J. A.**, Hay-Roe, S.H., and Terry, R. C. Who ate these bones? Quantifying the digestive fingerprints of raptors and other predators on the bones of their prey using scanning electron microscopy. *Willamette Valley Bird Symposium*. Corvallis, OR.

Poster presentations

- 2017 Hay-Roe, S. H., **Laney, J. A.**, and R. C. Terry. Who ate these bones? SEM analysis of digestive wear on the bones of small mammals. *Society of Vertebrate Paleontology Annual Meeting*. Calgary, AB

TEACHING EMPLOYMENT & EXPERIENCE

Instructor of Record

- 2019 – 2022 **Vertebrate Biology Laboratory (Z372):** Department of Integrative Biology, Oregon State University – Fall term (4 years), 167 students
 Instructed this capstone course for upper division Biology & Zoology majors. Instructed on evolutionary biology concepts, classification, and specimen identification of Pacific Northwest vertebrate taxa. Primary responsibilities included creating and implementing lectures, quizzes, grading, laboratory setup, museum collection and specimen upkeep, managing the laboratory-classroom, leading prep meetings, and training teaching assistants. Included leading and developing field trips. Completely redeveloped comprehensive course material with updated learning objectives, including reformatting and digitization of biological specimens for synchronous remote instruction during Covid-19 pandemic.
- 2021 **Field Ornithology (FW253):** Biology Department, Natural Resources Technology Program. Mt. Hood Community College – Spring term, 14 students
 Part-time faculty instructor position. Instructed on bird biology topics including avian evolutionary history and ecology, avian conservation and management, visual and auditory Pacific Northwest bird species ID, and various avian field survey techniques. Completely redeveloped comprehensive course material for synchronous remote instruction during the Covid-19 pandemic.

Graduate Teaching Assistant

- 2018 – 2023 **Principles of Biology (BI211, BI212, BI213, BI222, BI223):** Department of Integrative Biology, Oregon State University – 6 terms, 441 students
 Instructed the laboratory portion of the bachelor's degree core curriculum introductory series for biology and life science majors. Included curriculum development and teaching of Course-based Undergraduate Research Experience (CURE) labs focusing on student research with Aiptasia anemones (*Exaiptasia dioaphana*) and their algal symbionts. Primary responsibilities teaching labs, developing lectures/quizzes, grading, leading ecological sampling field trips, proctoring examinations, and teaching make-up labs.
- 2020 – 2022 **Animal Biology: Genes, Behavior & Evolution of Life (BI102):** Department of Integrative Biology, Oregon State University – 3 terms, 235 students
 Assisted instruction of this bachelor's degree core curriculum course for non-biology and non-life sciences majors. Primary responsibilities included grading and managing the laboratory-classroom environment. Taught online 1 term during the Covid-19 pandemic.
- 2020 – 2021 **Human Biology: Anatomy, Physiology and Disease (BI103):** Department of Integrative Biology, Oregon State University – 2 terms, 158 students
 Assisted instruction of this bachelor's degree core curriculum course for non-biology/non-life sciences majors. Primary responsibilities included online grading and holding virtual office hours during the Covid-19 pandemic.
- 2018 **Paleobiology (BI427):** Department of Integrative Biology, Oregon State University – Spring term, 22 students
 Assisted instruction of this capstone course for upper division Biology & Zoology majors focusing on paleontology, taphonomy, geology, and evolutionary biology concepts. Primary responsibilities included lab setup, grading, and managing the lab-classroom. Included assisting with transportation and logistics for a multi-day field trip.

Undergraduate Teaching Assistant

- 2016 **Systematics of Birds (FW312):** Undergraduate Teaching Fellowship. Dept. of Fisheries & Wildlife, Oregon State University – Fall term, 45 students
Assisted instruction of this course for Fish & Wildlife, Natural Resources, Forestry, and Zoology majors. Primary responsibilities included lab setup, grading, instruction of bird systematics and identification using natural history specimens, field ornithology and bird ID skill instruction, and managing the laboratory-classroom environment. Included assisting with transportation and logistics for field trips. Developed convergent bird evolution and avian soundscape lab activities. Held weekly bird identification recitations.
- 2015 **Field Ornithology (FW253):** Biology Department, Natural Resources Technology Program. Mt. Hood Community College – Spring term, 40 students
Assisted leading field labs focusing on visual and auditory bird identification and avian survey techniques. Included assisting with transportation and logistics for field trips.

TECHNICAL SKILLS

Programming & Software: R Programming Language, R Studio, QGIS, ArcGIS Pro, ArcMap, PC-Ord, ImageJ, FileMaker Pro, Google Suite, Keynote, Microsoft Excel, Microsoft PowerPoint, Microsoft Word, graphic design using Adobe Software Suite

Analytical Equipment & Laboratory Skills: FEI Quanta 200 Scanning Electron Microscope, Nikon SMZ18 Research Stereo Microscope, D500X Ultrasound Bat Detector, Sartorius Microbalances, Hach test kits, Hach Pocket Pro pH probe, Tremble data loggers, GPS cameras, compound microscopes, dissecting microscopes, ID of modern and fossil animal remains using osteological measurements, preparation of bone/hair/arthropod/plant specimens for stable isotope analysis, bone decalcification, Labconco freeze dryer, microfuge, sonicator, wet laboratory benchwork (pipette, fume hood, burners, hazardous waste mgmt., etc.), digital calipers, curation techniques

Avian Field Techniques: Point count methods (time-of-detection and distance sampling), mist net setup and takedown, mist net extraction, passerine and near passerine banding, raptor banding, setting goshawk traps and extracting raptors, waterfowl brood surveys, aging waterfowl broods, duck and geese capture, waterfowl banding, aging/sexing waterfowl techniques while handling bird, nocturnal owl surveys using playbacks, use of standard and modified USDA starling traps, spot mapping, line transects, area searches, flock estimation, sage-grouse lek monitoring, passerine nest surveys, non-lethal hazing techniques, bird euthanization techniques, audio/visual ID of 100s of avian species

Mammal Field Techniques: Live-release and removal trapping of small mammals using Sherman traps/Havahart traps/Tomahawk traps/museum snap traps/pitfall traps, mole traps, necropsy, study skin/skeleton/fluid specimen preparation, mammal euthanization techniques, mammal species identification in the field and via skeletal remains/dentition/skins, deployment of ultrasonic bat detectors, deer pellet distance surveys, rabies vaccinated (2019)

Other Ecological Field Methods: Pacific Northwest tree/shrub/herbaceous plant identification, milkweed/butterfly surveys, backpack electrofisher surveys, aquatic and terrestrial amphibian surveys, emergent vegetation marsh surveys, water quality testing kits, benthic macro-invertebrate sampling protocols using dip-nets, forest measurements and surveying using clinometer/relascope/laser rangefinder, automatic level, staff compass, total station, aerial photo interpretation, map and compass/GPS field navigation, fossil prospecting, Grinnell style field notebook

PROFESSIONAL AND COMMUNITY SERVICE

- 2023 **Workshop Organizer.** Scenario-Based Bystander Training to Prevent Sexual Harassment and Assault in Mammalogical Field Settings. 13th International Mammalogical Congress. Anchorage, AK. *Workshop proposal accepted.*
- 2022 – Present **Committee Member.** Human Diversity Committee. American Society of Mammalogists.
- 2022 **Scientific Reviewer.** Permeability map for Ord's Kangaroo Rat (*Dipodomys ordii*). Oregon Connectivity Assessment & Mapping Project. Portland State University.
- 2016 – 2021 **Board Member.** Friends of Hart Mountain National Antelope Refuge. **President** (2020-21), **Treasurer** (2019-20), **Vice President** (2019)
- 2016 – 2018 **Board Member.** Audubon Society of Corvallis.
- 2022 **Volunteer Greater Sage-Grouse Lek Monitor.** Oregon Department of Fish and Wildlife.
- 2016 **Birding Guide.** Bald Hill Farm Bird Walk. Greenbelt Land Trust.
- 2016 **Birding Guide.** Winter Wildlife Field Day. William L. Finley National Wildlife Refuge.
- 2016 **Volunteer.** Invasive plant removal. HestHavn Nature Center. Audubon Society of Corvallis.
- 2015 – 2017 **Volunteer Raptor Surveyor,** Winter Raptor Survey Project, East Cascades Audubon Society.
- 2015 – 2016 **Planning.** Oregon State University Tangent Christmas Bird Count.
- 2015 **Writing Contributor.** Oregonians 4 Owyhee Project. Owyhee Canyonlands Campaign.
- 2012 – 2019 **Volunteer Greater Sage-Grouse Lek Monitor.** United States Fish and Wildlife Service
- 2012 – 2015 **Volunteer.** Riparian & range restoration, Wilderness Study Area surveyor. Oregon Natural Desert Association.

ACADEMIC SERVICE

- 2019 – Present **Co-Founder, Committee Member,** FieldSafe: Initiative to Confront and Eliminate Sexual Misconduct in Fieldwork and Remote Research, Oregon State University.
- 2021 **Seminar Organizer, Moderator.** Promoting Safe Field-Based Research: A web panel discussion about prevention of sexual harassment and assault in the field. College of Science, Oregon State University.
- 2017 – 2021 **Scientific Program Planning Committee** (2021, 2020), **Moderator** (2017), Willamette Valley Bird Symposium. Oregon State University
- 2018 – 2023 **Undergraduate Mentorship.** Co-advised 1 post-baccalaureate GIS certificate internship. Advised 13 undergraduate or post-baccalaureate lab assistants, 7 undergraduate field research technicians, 3 undergraduate curatorial assistants, 1 undergraduate research project.
- 2020 – 2022 **Panelist.** Outreach, Engagement, & Scientific Communication Panel. IB 511- Graduate Student Orientation. Department of Integrative Biology, Oregon State University.
- 2020 – 2021 **Graduate Peer Mentor.** Department of Integrative Biology, Oregon State University.
- 2019 **Speaker Scheduling.** Ecology, Evolution & Conservation Biology Seminar Series, OSU
- 2018 **Oral Presentation and Workshop.** Identification of Raptors in Oregon, Dept. of Fisheries & Wildlife, Oregon State University.
- 2017 – 2019 **Volunteer.** Bird Functional Morphology, Discovery Days, Oregon State University.
- 2017 – 2019 **Volunteer.** Dept. of Integrative Biology Open House, Oregon State University.
- 2016 – 2019 **Curatorial Service.** Transport and care for OSU Mammoth and other Reser fossil specimens. Dept. of Integrative Biology, Oregon State University.
- 2016 – 2017 **Organizer, Guide.** OSU Bird Nerds Fieldtrip: Student Intro to Birds of the Northern Great Basin. OSU Bird Nerds/FW Club Fieldtrip: Hart Mtn. & Malheur National Wildlife Refuges.
- 2016 **Oral Presentation.** Malheur's Past, Present, & Future: Misfortune & Opportunity. Presentation on the history and current events of Malheur NWR. AVES Group. OSU
- 2015 – 2021 **Graduate Advisor, Undergraduate Vice-President.** OSU Bird Nerds Club, Oregon State U.
- 2015 **Student Editor,** Summit Journal, Dept. of Life Sciences, Mt. Hood Community College.

STUDENT MENTORSHIP

<i>Term/Year</i>	<i>Project</i>	<i>Student Name</i>	<i>Affiliation</i>
F '22 – W '23	Lab Research Assistant – Arthropod ID, Isotopic Sample Prep	Sin Harrington	Biology Dept.
W '23	Lab Research Assistant – Isotopic Sample Prep	Allison Joyce	Environ. Sciences Dept.
W '22 – F '22	Lab Research Assistant – Small Mammal Specimen Prep, Field Research Assistant	Shanti Lindberg	Fisheries & Wildlife Dept.
W '22 – F '22	Curation Assistant – Braly Bird Collection, Specimen Prep	Havana Soler	Biology Dept.
W '22 – Sp '22	Lab Research Assistant – Isotopic Sample Prep	Ole Koerner	Biology Dept.
W '22 – W '23	Lab Research Assistant – Isotopic Sample Prep, Small Mammal Specimen Prep	Riley Jones	Biology Dept.
F '21 – W '23	Lab Research Assistant – Isotopic Sample Prep, Plant ID, Small Mammal Specimen Prep	Manon Vezinet	Biology Dept.
Su '21 – W '22	GIS Certificate Internship, Field Research Assistant	Bridget Regan	Biology Dept.
Su '21	Field Research Assistant, Data Mgmt.	Sam Hay-Roe	Biology Dept.
Su '21	Small Mammal Field Internship	Dustin Campbell	Biology Dept.
Su '21	Small Mammal Field Internship	Russell Campbell	Biology Dept.
W '20 – W '22	Undergraduate Research – Rodent Isotopic Niche Project, Field Research Assistant	Chris Young	Fisheries & Wildlife Dept.
Su – W '20	Collections Assistant – Braly Bird Collection Curation	Russell Campbell	Biology Dept.
Su '20	Collections Assistant – Braly Bird Collection Curation	Dustin Campbell	Biology Dept.
F '19 – W '20	Lab Research Assistant – Specimen Prep	Ole Koerner	Biology Dept.
Su '19 – F '19	Small Mammal Field Internship, Specimen Prep	Chris Young	Fisheries & Wildlife Dept.
Su '19	Small Mammal Field Internship	Caitlin Helman	CEOAS
Su '19	Small Mammal Field Internship	Antony Zambito	Fisheries & Wildlife Dept.
Sp '19 – F '19	Lab Research Assistant – Field Prep, Data Mgmt.	Carson Henke	Biology Dept.
Su '18 – F '18	Lab Research Assistant - Data Mgmt.	Haley Machado	Fisheries & Wildlife Dept.
Sp '18 – Sp '19	Lab Research Assistant - Data Mgmt., Field Prep	Riley Tishendorf	Biology Dept.
Sp '18 – W '20	Lab Research Assistant – Plant ID, Data Mgmt.	Payton Hazelton	Environ. Sciences Dept.

PROFESSIONAL SOCIETY MEMBERSHIP

American Society of Mammalogists
 American Ornithological Society

REFERENCES

Dr. Rebecca Terry, Associate Professor

Dept. of Integrative Biology, Oregon State University
 rebecca.terry@science.oregonstate.edu

Dr. Robert Mason, Sandy and Elva Sanders Eminent Professor, J.C. Braly Curator of Vertebrates

Dept. of Integrative Biology, Oregon State University
 robert.mason@oregonstate.edu

Dr. W. Douglas Robinson, Mace Professor of Watchable Wildlife

Department of Fisheries and Wildlife, Oregon State University
 douglas.robinson@oregonstate.edu

Dr. Adam Chouinard, Instructor

Dept. of Integrative Biology, Oregon State University
 chouinad@oregonstate.edu

Dr. Walter Shriner, Professor

Natural Resources Technology Program, Department of Biology, Mt. Hood Community College
 walter.shriner@mhcc.edu