16 September 2022

EcoHealth Alliance
520 Eighth Avenue, Ste. 1200
New York, NY 10018

To whom it may concern,

Please accept this cover letter and attached CV as an indication of my interest in the Quantitative Ecology Research Scientist position. I plan to defend my PhD dissertation on applications of Bayesian hierarchical models at the end of 2022 and will be able to start a full-time position in early 2023. While reviewing the job description and duties, I was pleased to see the emphasis on applying ecological modeling to disease monitoring and management. My career goal is to eventually become a professor at an R1 university and lead a research lab focusing on wildlife disease modeling and parasitology, and this position would allow me to continue building my quantitative skills and meaningful connections in the non-academic world.

My graduate education at the University of Vermont has provided me with the skills necessary to be successful in this position. I have extensive experience in ecological modeling, particularly using non-frequentist methods such as Bayesian occupancy models and spatially explicit agent-based models. I am particularly proud of my involvement in two different projects, one involving modeling coffee leaf rust transmission at the landscape scale and the other evaluating the efficacy of the USDA's strategies for managing rabies in urban areas. In both collaborations, I brought my quantitative skill set to a diverse team of scientists, and members of the team applied their unique perspectives to address real-world problems. I was the lead author or lead co-author on both of these projects, allowing me to build my skills in project management and interpersonal skills, including written and verbal communication. The rigors of my research and PhD program has required me to be highly adaptive, and many of my quantitative skills have been self-taught.

I am eager to work with and learn from my fellow disease ecologist colleagues at the EcoHealth Alliance. If you have any questions, I can be reached primarily via email (emily.beasley@uvm.edu) or by phone (816-582-9047).

Thank you for your time and consideration.

Sincerely,

Emily M. Beasley
emily.beasley@uvm.edu
PhD Candidate
Vertebrate Collections Manager, Zadock Thompson Natural History Collections
Department of Biology
University of Vermont

Emily Beasley

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Department of Biology
University of Vermont

EDUCATION

Aug. 2018–Present, University of Vermont
Ph.D. Biology
Advisor: Nicholas Gotelli
- QuEST Trainee
- Vertebrate Collections Manager: Zadock Thompson Natural History Collections

Jan. 2016–Dec. 2017, Missouri State University
M.S. Biology
Advisor: Sean Maher
- Thesis: Island biogeography of small mammals and associated ectoparasites in the Ozark glades

Aug. 2011-May 2015, Missouri State University
B.S. Wildlife Biology (Summa cum Laude, Honors)

PUBLICATIONS

Beasley, E.M., Aristizábal, N., Bueno, E.M., & White, E.R. 2022. The spore of the beans: Spatially explicit models predict coffee rust spread in fragmented landscapes. *Landscape Ecology,* https://doi.org/10.1007/s10980-022-01473-1

Beasley, E.M. & Maher, S.P. 2019. Small mammal community composition varies among Ozark glades. *Journal of Mammalogy* 100:1774–1782.

Beasley, E.M., Nelson, K.M., Slate, D., Gilbert, A., Pogmore, F., Chipman, R.B., and Davis, A.J. The impact of oral rabies vaccination targeting raccoons across a development intensity gradient in Burlington, Vermont, USA, 2015-2017. In review at *Journal of Wildlife Diseases.*

Beasley, E.M. Ecologically informed priors improve Bayesian model estimates of species richness and occupancy for undetected species. In revision.

PRESENTATIONS

2022   American Society of Mammalogists Annual Meeting. The impact of oral rabies vaccination targeting raccoons across a development intensity gradient in Burlington, Vermont, USA, 2015-2017. Talk.

2021   The Wildlife Society Annual Meeting (Virtual). Vaccine baiting strategy influences rabies seroprevalence rates in urban raccoon populations. Talk.

2021   Ecological Society of America Annual Meeting (Virtual). Dealing with nondetection: ecologically informed priors improve Bayesian model estimates of missing species. Talk.

2021   American Society of Mammalogists Annual Meeting (Virtual). Dealing with nondetection: ecologically informed priors improve Bayesian model estimates of missing species. Talk.

2020   Ecological Society of America Annual Meeting (Virtual). The spore of the beans: Using spatially explicit methods to model the spread of coffee rust in simulated landscapes. Talk.

2019   American Society of Mammalogists Annual Meeting. Characterizing Small Mammal Communities in an Agriculture/Forest Landscape. Lightning talk.

2019   Northeast Natural History Conference. Responses of Small Mammal Communities to Local and Landscape Factors in a Forest/Agriculture Mosaic. Poster.

2018   American Society of Mammalogists Annual Meeting. Applying island biogeography to small mammals while accounting for imperfect detection. Talk.

2017   Central Plains Society of Mammalogists Annual Meeting. Island biogeography of small mammals in the Ozark glades. Talk.

2017   American Society of Mammalogists Annual Meeting. Island biogeography of small mammals in the Ozark glades. Poster.

PROFESSIONAL DEVELOPMENT

2018   Holistic Specimen Collection Workshop: Small Mammal Parasite Sampling, Preservation, and Identification. American Society of Mammalogists Annual Meeting.

TEACHING

August 2019-Present, University of Vermont
Instructor
- Introduction to R for Biologists. Teach students the programming language R through live in-class coding, weekly assignments, and a semester project. Students use R as a template for learning foundational skills in computer programming, such as directory structures, data structures, and writing and executing functions, that can be applied to

other programming languages such as Python or Julia. Students also learn the principles and skills necessary for managing and analyzing data, including but not limited to cleaning data, planning and executing an analysis, and data visualization. Students apply these skills to existing datasets from the realms of ecology and public health.

Teaching Assistant
- Computational biology. Graduate-level course teaching students a variety of computational tools to make analysis, writing, and presentations more efficient and attractive, including R, plain-text editors, markdown, github, regular expressions, and shell commands. Additionally, students learn how to use probability distributions, simulate data, recognize, use, and analyze 4 archetypal experimental designs for biologists, apply them to real and simulated data, and create publication quality graphs with the ggplot2() package in R. TA duties involve running the lab component of the course, which begins with a brief overview of the week's programming assignment, introduces tips and strategies for completion, and providing troubleshooting help.

- Mammalogy. Provide students with an overview of mammals, including important adaptations, morphology, and taxonomy of major orders and families. Introduce students to various techniques used for studying mammals, including field methods, curation skills, and the use of software such as R and ARBIMON. Reinforce essential scientific skills including scientific writing, data analysis, and communication via a series of data labs.

Jan. 2016-Dec. 2017, Missouri State University
Teaching Assistant
- Introductory Biology II. Present introductory biology lab material in a clear and understandable manner. Teach essential scientific and writing skills through class experiments and lab reports.
- Advising. Provide information to high school students and parents regarding Missouri State undergraduate programs and resources in general and Biology Department programs specifically. Give tours of department facilities. Represent the department in an informative, professional manner.
- Mammalogy. Organize field trips, including transporting field gear such as traps, bait, etc. Instruct students on field methods for trapping and collecting data on small mammals in southwest Missouri.

OTHER EMPLOYMENT

Feb. 2018-July 2018, Nemours Wildlife Foundation
Wildlife Technician
- Collected data on small carnivore/mesocarnivore use of managed coastal impoundments in South Carolina. Collected scat for use in population genetic analysis. Identified mammalian tracks to species. Collected camera trap data for occupancy and abundance estimates.

May 2015-Aug. 2015, Missouri State University
Field Biologist
- Tracked alligator snapping turtles using radiotelemetry. Collected environmental data. Operated small-engine boat in adverse weather conditions.

Jan. 2015-Apr. 2015, Rockhampton Zoo, Rockhampton, Australia
Student Intern
- Research: Captive koala stress. Collected baseline behavioral data for comparisons to different housing conditions. Collected feces for analysis of glucocorticoid concentrations using GC-MS machine.
- Animal Husbandry. Cared for various exotic animals, such as dingoes, goannas, koalas, emus, etc. under the supervision of zoo staff.

SKILLS
- *Computer Skills:* R, OpenBUGS/JAGS, Python, ArcGIS
- *Other Skills:* Small mammal trapping/handling, ectoparasite identification, small mammal collection curation and specimen preparation, camera trap operation, radiotelemetry

EXTRAMURAL GRANTS
- American Society of Mammalogists Grant-in-Aid of Research (2020-2021, 1500 USD)
- Theodore Roosevelt Memorial Fund (Apr. 2019–Apr. 2020, 750 USD)

AWARDS
- American Society of Mammalogists Student Travel Award (2022)
- American Society of Mammalogists Annie M. Alexander Award (2018)
- Central Plains Society of Mammalogists Best Talk by a Master's Student (2017)
- American Society of Mammalogists Student Travel Award (2017)
- Missouri State General Biology Scholarship (2017)
- Missouri State University Graduate Thesis Funding Award (2016)

SERVICE

American Society of Mammalogists Human Diversity Committee Member (2022–Present)

Manuscripts Reviewed:

    2022   *Ecology*
    2020   *Agriculture, Ecosystems, and Environment; Ecological Monographs*
    2019   *Theoretical Ecology*

MEMBERSHIPS
- American Society of Mammalogists
- Ecological Society of America
- The Wildlife Society