CURRICULUM VITAE

EMILY J. HUDSON, PhD

Data Scientist and Researcher
emilyjanehudson@gmail.com | ejhudson.netlify.app

EXPERIENCE

2022–2025 Associate Data Scientist, CliftonLarsonAllen

Worked in R and Python to develop custom solutions for maximizing employee utilization. Collaborated with an Agile team using version control on Github and Azure DevOps. Special focus on tidyverse R tools and distributed data analysis in Python with the PySpark API.

2019–2022 Postdoctoral Research Scholar, Vanderbilt University (advisor: Prof. Nicole Creanza)

Developed a novel application of a mathematical model of human cultural evolution to bird song in R. Used Python and SQL to query large datasets of bird observation records and generate seasonal range estimates. Completed courses in Python, Jupyter and scikit-learn.

EDUCATION

PhD (2019) University of Nebraska, Lincoln, NE
Specializing in Ecology, Evolution and Behavior

Advisor: D. Shizuka
Dissertation: Early Species Recognition in the Golden-Crowned Sparrow (*Zonotrichia atricapilla*)

Designed and carried out novel experiments in remote field sites while mentoring teams of younger scientists serving as field assistants. Developed interpretable models from messy behavioral data using custom R scripts, including generalized linear mixed-effects models; visualized results in ggplot and presented to other scientists and the public.

B.A. (2008) Vassar College, Poughkeepsie, NY
Cognitive Science

SELECTED PUBLICATIONS

Hudson, E. J., & Creanza, N. (2022). "Modeling how population size drives the evolution of birdsong, a functional cultural trait." **Evolution,** 76(6), 1139-1152.

Shizuka, D., & Hudson, E.J. (2020) "To accept or reject heterospecific mates: Behavioral decisions underlying speciation." **Philosophical Transactions of the Royal Society B,** 375 (1802), 20190484.

Hudson, E.J. , Creanza, N. & Shizuka, D. (2020) "The role of early acoustic experience in song discrimination." **Frontiers in Ecology and Evolution** 8, 99.

Hudson, E.J**.**, Hahn, M.* & Shizuka, D. (2019). Nestling and adult sparrows respond differently to conspecific dialects. **Behavioral Ecology**, 30 (1), 48-56.

Hudson, E. J**.,** & Shizuka, D. (2017). Introductory whistle is sufficient for early song recognition by golden-crowned sparrow nestlings. **Animal Behaviour**, *133*, 83-88.

Hudson E.J., Price T.D. (2014). "Pervasive reinforcement and the role of sexual selection in biological speciation." **Journal of Heredity,** *105*(S1), 821-833.

*Undergraduate author

SELECTED PRESENTATIONS

Hudson, E.J., Creanza, N. "Birdsong, from the nest to the Cloud." Invited virtual seminar at Truman State University, September 2021.

Hudson, E.J., Creanza, N. "Modeling how population size drives the evolution of birdsong, a functional cultural trait" Virtual poster presentation to Vanderbilt Postdoc Association, October 2020, Nashville TN.

Hudson, E.J., Creanza, N. "Ornament, armament, or toolkit? How demographics influence the evolution of birdsong." Oral presentation at Animal Behavior Society 2020 virtual conference.

AWARDS and FELLOWSHIPS

2013 – 2016 Othmer Fellowship, University of Nebraska-Lincoln

2014 – 2017	Ecology and Organismal Biology (EOB) Graduate Assistance in Areas of National Need (GAANN) Fellowship, University of Nebraska-Lincoln
2015	Joseph Grinnell Student Research Award, Cooper Ornithological Society
2015	Honorable Mention, NSF Graduate Research Fellowship
2016	Student Research Award, American Society of Naturalists
2019	Postdoc Travel Award, American Ornithological Society

TEACHING EXPERIENCE

April 2017	Guest lecturer, Comparative Anatomy, "Birds, brains and species recognition," Doane University
Spring 2015	Graduate Teaching Assistant, Fundamentals of Biology II (LIFE121), University of Nebraska-Lincoln
Spring 2014, 2016 & 2017	Graduate TA, Ecology and Evolution (BIOS 207), UNL
Fall 2013	Graduate TA, General Biology (BIOS 101), UNL