ISADORA FLUCK ESSIG

University of Wisconsin-Madison
Department of Entomology

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EDUCATION

Ph.D. in Interdisciplinary Ecology – University of Florida, USA (2021-2026)

M.Sc. in Animal Biodiversity – Federal University of Santa Maria (UFSM), Brazil (2018–2020)

B.Sc. in Biological Sciences – Federal University of Santa Maria (UFSM), Brazil (2014–2018)

PROFESSIONAL ACTIVITIES

Research Associate
University of Wisconsin-Madison · Full-time · August 2026 – current

Graduate Assistant
University of Florida · Full-time · August 2021 – August 2026 (5 yrs)

Teaching Assistant
University of Florida · Hybrid · August 2021 – May 2025 (3 yrs 10 mos)
Course: STA 6093 – Introduction to Applied Statistics for Agricultural and Life Sciences

Research Mentor in Ecology
Harvard University · Full-time · May 2022 – August 2022 (4 mos)

PUBLICATIONS

Peer-Reviewed Articles

1) **Fluck, I.E.**, Record, S., Strecker, A., Zarnetske, P.L., Adams, D.C., Tingley, M.W., Siegel, R.B. & Baiser, B. (2026). Continental Drivers of Population-Level Intraspecific Trait Variability in Salamanders, Birds, and Small Mammals. *Journal of Global Ecology and Biogeography,* 35(7), e70266. https://doi.org/10.1111/geb.70266

2) Rego, M. A., Johnson, O., **Fluck, I. E**., Del-Rio, G., & Brumfield, R. T. (2026). The Influence of Rivers and the Environment on Avian Taxon Composition Across Lowland Amazonia. *Journal of Biogeography*, *53*(3), e70185. https://doi.org/10.1111/jbi.70185

3) East, A., Campolongo, E.G., Meyers, L., Rayeed, S.M., Stevens, S., Zarubiieva, I., **Fluck, I.E.**, Girón, J.C., Jousse, M., Lowe, S., Perry, K.I., Betancourt, I., Charney, N., Donoso, E., Fox, N., Landsbergen, K.J., Nepovinnykh, E., Ramirez, M., Singh, P., Thapa-Magar, K., Thompson, M., Waite, E., Berger-Wolf, T., Lapp, H., Mabee, P., Stewart, C., Taylor, G., & Record, S. (2025). Optimizing image capture for computer vision-powered taxonomic identification and trait recognition of biodiversity specimens. *Methods in Ecology and Evolution,* 16, 2260-2275. https://doi.org/10.1111/2041-210X.70140

4) **Fluck, I.E.**, Record, S., Strecker, A., Zarnetske, P.L., & Baiser, B. (2024). The influence of sample size and sampling design on estimating population-level intraspecific trait variation (ITV) along environmental

gradients. *Ecology and Evolution*, 14(9), e70250. https://doi.org/10.1002/ece3.70250

5) Girón Duque, J.C., Balk, M.A., Dahdul, W., Lapp, H., Mikó, I., Alhajjar, E., Wynd, B., Tarasov, S., Lawrence, C., Khakurel, B., Porto, A., Yan, L., **Fluck, I.E.**, Porto, D.S., Keating, J.N., Borokini, I.T., Seltmann, K.C., Montanaro, G., & Mabee, P. (2024). Meeting report for the Phenoscape TraitFest 2023 with comments on organising interdisciplinary meetings. *Biodiversity Information Science and Standards*, 8, e115232. https://doi.org/10.3897/biss.8.115232

6) Carvalho, W.D., **Fluck, I.E.**, de Castro, I.J., Hilário, R.R., Martins, A.C.M., de Toledo, J.J., Xavier, B.S., Dambros, C., & Bobrowiec, P.E.D. (2023). Elevation drives taxonomic, functional and phylogenetic β-diversity of phyllostomid bats in the Amazon biome. *Journal of Biogeography*, 50(1), 70–85. https://doi.org/10.1111/jbi.14533 - (**First and second authors contributed equally**; recipient of the *Journal of Biogeography* Innovation Award)

7) Cáceres, N.C., & **Fluck, I.E.** (2021). The hard task of a short-tailed mouse opossum (*Monodelphis*) to prey a harvestman (Arachnida: Opiliones). *Iheringia. Série Zoologia*, 111, e2021014. https://doi.org/10.1590/1678-4766e2021014

8) Azevedo, R.A., Santos, Q.C.L., **Fluck, I.E.**, Rodrigues, D.J., Battirola, L.D., & Dambros, C.S. (2021). Selective logging does not alter termite response to soil gradients in Amazonia. *Journal of Tropical Ecology*, 37(1), 43–49. https://doi.org/10.1017/s0266467421000080

9) **Fluck, I.E.**, Cáceres, N., Hendges, C.D., Brum, M.N., & Dambros, C.S. (2020). Climate and geographic distance are more influential than rivers on the beta diversity of passerine birds in Amazonia. *Ecography*, 43(6), 860–868. https://doi.org/10.1111/ecog.04753

Software

10) Read, Q.D., Yue, A., **Fluck, I.E.**, Baiser, B., Grady, J.M., Zarnetske, P.L., & Record, S. (n.d.). *Ostats: O-statistics, or pairwise community-level niche overlap statistics*. R package.

Datasets

11) **I.E. Fluck**, I. Chinniah, R. Wolcheski, M. Khurana, SM Rayeed, B. Baiser, E.G. Campolongo, A. Karpatne, C.V. Stewart, and S. Record. *2018-NEON-beetles*. 2018-NEON-beetles | NSF Public Access Repository

In preparation

12) B Baiser; J Bernardin; E Young; G Cagle; Z Freedman; S Gray; E Divinagracia; **IE Fluck**; D Gravel; S LeClare; Z Long; S Record; K Rhyner; L Bittleston. Uncovering the role of time, biogeography, resources, and food web composition on microbial primary succession.
Accepted for Proceedings of the Royal Society B

13) S M Rayeed; A East; M Khurana; **IE Fluck**; M Denslow; G Taylor; S Stevens; B Baiser; EG Campolongo; S Lowe; I Zarubiieva; E Donoso; H Lapp; M Ramirez; T Berger-Wolf; A Karpatne; C Stewart; JL Wu; P Mabee; S Record. A continental-scale dataset of ground beetles with high-resolution images and validated morphological trait measurements. https://arxiv.org/abs/2601.10687
Currently under (minor) review in *Nature Scientific Data*

14) D.A. Ahmed; N. Tahat; **IE Fluck**; M.H. Holden; J. Bailey; F.R. Badenes-Pérez; E.J. Hudgins; P.E. Hulme; F. Vinatier. *Insect movement and spatial dynamics determine trap crop effectiveness*.
Submitted to *Ecological Modelling*.

15) IE Fluck & B. Baiser. *Integrating population-level intraspecific trait variation (ITV) into metrics of trait overlap between species assemblages*.
In prep.

Thesis

16) **Thesis ("Undergraduate thesis"):** "Fatores influentes sobre a diversidade beta de espécies de aves na Amazônia"
17) **Master dissertation:** "The effect of Amazonian rivers and environment features on birds' biogeographic history".
18) **PhD dissertation:** "From Individuals to Assemblages: The Importance of Population-Level Intraspecific Trait Variation (ITV) for Biodiversity Patterns".

AWARDS

Fellowship by Programa Institucional de Bolsas de Iniciação Científica (PIBIC – CNPq). Federal University of Santa Maria (UFSM), Rio Grande do Sul, Brasil. 2016—2017.

Fellowship by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES Federal University of Santa Maria (UFSM), Rio Grande do Sul. 2018-2020.

Assistantship by the National Science Foundation (NSF). University of Florida (UF), Gainesville, Florida. 2021-2025.

EVENT ORGANIZATION

VII Symposium of Biodiversity, Federal University of Santa Maria – 2019
Organizing committee member for the seventh edition of the symposium focused on biodiversity research and education (150+ attendees).

Workshop: R for Beginners: A Brief Introduction
Instructors: **Isadora E. Fluck**, Gabriela Dri and Felipe Cerezer
Federal University of Santa Maria - 2019

PROFESSIONAL PRESENTATIONS AND EVENT PARTICIPATION

Oral Presentations

"**From Individuals to Assemblages: The Importance of Population-Level Intraspecific Trait Variation (ITV) for Biodiversity Patterns.**"
Fluck, I.E.
University of Florida, School of Natural Resources and Environment Exit Seminar - Gainesville, Florida, February 2026.
Available at: SNRE Seminar | Isadora Essig Fluck | Spring 2026

"Continental-scale drivers of population-level intraspecific trait variation (ITV)."
Fluck, I.E., Record, S., Strecker, A., Zarnetske, P.L., & Baiser, B.
Ecological Society of America (ESA) Annual Meeting 2024 **-** Long Beach, California, 2024.

"Estimating ratios of Type I and II errors on intraspecific trait variation (ITV)."
Fluck, I.E., Record, S., Strecker, A., Zarnetske, P.L., & Baiser, B.
Ecological Society of America (ESA) Annual Meeting 2023 - Portland, Oregon, 2023.

Poster Presentations

"Quantifying trait overlap between ecological assemblages."
Fluck, I.E. & Baiser, B.
Ecological Society of America (ESA) Annual Meeting 2025 **-** Baltimore, Maryland, 2025.

"Continental-scale drivers of population-level intraspecific trait variation (ITV) in salamanders, birds, and small mammals."
Fluck, I.E., Record, S., Strecker, A., Zarnetske, P.L., & Baiser, B.
SNRE Symposium 2024 - University of Florida, Gainesville, FL, 2024.

"The influence of sample size and sampling design on estimating population-level intra specific trait variation (ITV) along environmental gradients."
Fluck, I.E., Record, S., Strecker, A., Zarnetske, P.L., & Baiser, B.
NSF Virtual Macrosystems Biology Community Meeting

"Geographic distance and temperature explain Passeriformes beta diversity in Amazon."
Fluck, I.E., Cáceres, N., Hendges, C.D., Brum, M.N., & Dambros, C.S.
Ornithological Congress of the Americas and XXIV Brazilian Ornithology Congress - Puerto Iguazú, Argentina, 2017.

"Fragmentation and matrix changes influence spatial variation in population density of Sapajus nigritus."
Cáceres, N., Cerezer, F.O., Hendges, C.D., Melo, G.L., & Goncalves, A.S.
31st Integrated Academic Journey - Federal University of Santa Maria, Brazil, 2016.

"Invasive exotic birds in Brazil: implications on biodiversity and management."
Dri, G.F., Fluck, I.E., & Souza, A.S.
X Neotropical Ornithological Congress / XXII Brazilian Ornithology Congress - Manaus, Brazil, 2015.

Other Academic Events Attended

V Academic Symposium on Marine Biology — Federal University of Rio Grande do Sul (UFRGS), Brazil, 2016

XXIII Brazilian Congress of Ornithology — University of Brasília (UnB), Pirenópolis, GO, Brazil, 2016

Social and Environmental Education Seminar on Endangered Vertebrate Species in Santa Maria and Central Region — Federal University of Santa Maria, Brazil, 2016

V Biodiversity Symposium — Federal University of Santa Maria, Brazil, 2015

IV Academic Symposium on Marine Biology — Federal University of Rio Grande do Sul (UFRGS), Brazil, 2014

VI Wildlife Symposium — Federal University of Santa Maria, Brazil, 2014

RELEVANT COURSEWORK

MAIN

BeetlePalooza - Hands-on workshop on **AI and machine learning** in biodiversity research, hosted by the **Imageomics Institute** at The Ohio State University, Columbus, OH. Participants developed tools to identify beetle species and extract trait data from over 11,000 NEON-collected specimens. *August 12–15, 2024.* Watch a video about the event at: *BeetlePalooza2024 Video Update, Isadora Fluck E.*

TraitFest - Workshop on **machine-interpretable trait data** (Phenoscape / SCATE – Semantics for Comparative Analysis of Trait Evolution), hosted at RENCI, Chapel Hill, NC. *January 23–26, 2023*

Introduction to Bayesian Inference - Graduate Program in Ecology and Evolution, Federal University of Goiás (UFG). 30 hours. Instructor: Dr. Thiago F. Rangel. *August 2020*

Macroevolution and phylogenetic comparative methods - PEDECIBA Biology Graduate Program, Universidad de la República, Maldonado, Uruguay. 40 hours (20h theory, 20h practical). Instructors: Dr. Luke Harmon and Dr. Liam Revell. *May 6–10, 2019*

Methods in Historical Biogeography - Graduate Program in Animal Biology, Federal University of Rio Grande do Sul (UFRGS). 60 hours. *2018*

Ecological Niche Modeling and Species Distribution Models - Federal University of Goiás (UFG), Goiânia. *May 7–11, 2018*

I Cerrado and Pantanal Extension Course - Federal University of Santa Maria, Brasil, 2017

OTHERS

Courses

Functional Trait Space Analyses in R - Remote short course offered by *Physalia Courses* on the theory and application of functional trait space analyses in R, including construction, interpretation, and visualization of trait spaces. Instructor: Dr. Giacomo Puglielli. 8 - 10 September 2025.

Introductory Scientific Illustration – Federal University of Santa Maria (UFSM), 2016. 16 hours.

Bird Taxidermy for Scientific Collections – Federal University of Rio Grande do Sul (UFRGS), 2016. 16 hours.

Sampling and Identification of Vertebrates – Federal University of Santa Maria (UFSM), 2015. 40 hours.

Ornithology – Portal Educação, Campo Grande, Brazil, 2015. 60 hours.

University extension in Textual Production Course with focus on Contests – University of Vale do Taquari (UNIVATES), 2013. 20 hours.

University Extension in Astronomy Extension Course – Module II – University of Vale do Taquari (UNIVATES), 2011. 40 hours.

Workshops & Short Courses

Ecological Niche Modeling – University of Brasília, 2016. 7 hours.

Scientific Drawing – Federal University of Santa Maria (UFSM), 2014 & 2015. 4 hours.

Bird Watching – Federal University of Santa Maria (UFSM), 2014. 12 hours.

OUTREACH

Bio na rua ("**Bio on streets**" – an exhibition of our research work for the community)
Santa Maria, RS, Brazil - 2019

Exhibition of bird scientific drawings for the community
Arroio do Meio, RS, Brazil - 2018

Ornithological educational activity for children
Arroio do Meio, RS, Brazil - 2018

SERVICE AS REVIWER

2025 Ad hoc referee, *Scientific Data* (1)
2024 Ad hoc referee, *Ecosphere* (1)
2023 Ad hoc referee, *Ecosphere* (1)
2023 Ad hoc referee, *Ciência e Natura* (1)

2022 Ad hoc referee, *Journal of Biogeography* (1)
2022 Ad hoc referee, *Methods in Ecology and Evolution* (1)
2021 Ad hoc referee, *Journal of Biogeography* (1)

LANGUAGES

Portuguese: Full proficiency in speaking, reading, and writing

English: Advanced comprehension, speaking, reading, and writing

Cambridge English Entry Level Certificate in ESOL International (Entry 3) (Key)* - Level B1, Cambridge English Language Assessment. – **2016**

TOEFL - 2020

Spanish: Fair comprehension, speaking, reading, and writing (currently taking classes)

German: Basic comprehension, speaking, reading, and writing

German Proficiency /Level A2, Deutsche Auslandsschularbeit International. – **2011**
German Proficiency /Basic Level (A1+), German Coordination of Southern Brazil. - **2010**