

Jessica Hite

ASSISTANT PROFESSOR, UNIVERSITY OF WISCONSIN-MADISON

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Education

Indiana University, Bloomington, IN.

Ph.D.

University of Tennessee, Knoxville, TN.

B.S.

Appointments

Assistant Professor

DEPARTMENT OF PATHOBIOLOGICAL SCIENCES, SCHOOL OF VETERINARY MEDICINE

University of Wisconsin-Madison

Jan. 2021

NIH NRSA Postdoctoral Fellow

PROJECT: DATA-THEORY INTEGRATION TO UNDERSTAND THE PHYSIOLOGICAL UNDERPINNINGS OF HOST DEFENSE

University of Nebraska-Lincoln

Aug. 2018 - Present

Programs in Excellence Postdoctoral Fellow in Population Ecology

PROJECT: DEVELOPING MATHEMATICAL MODELS TO FORECAST PATHOGEN EVOLUTION

University of Nebraska-Lincoln

Aug. 2016 - Aug. 2018

Fulbright Foundation Research Scholar

WORKING WITH MULTIPLE NGOs ON AMPHIBIAN CONSERVATION

Panamá City, Panamá

Jun. 2009 - Aug. 2010

Publications

- 24. Hite, J.L., A.C. Pfenning-Butterworth, and S.K. Auld** 2023. Infectious disease: The ecological theater and the evolutionary play. *Ecology and Evolution*.
- 23.** J.C. Walsman, A.T. Strauss, **J.L. Hite**, M.S. Shocket, and S.R. Hall. 2022. A paradox of parasite resistance: Disease-driven trophic cascades increase the cost of resistance, selecting for lower resistance with parasites than without them *Ecology and Evolution*.
- 22.** A.C. Pfenning-Butterworth, D.T. Nguyen, **Hite, J.L.**, and C.E. Cressler. 2022. Circadian rhythms mediate infection risk in *Daphnia dentifera*. *Ecology and Evolution*.
- 21.** Y. Tao, **Hite, J.L.**, K.M Lafferty, D.J. Earn, and N. Bharti. 2021. Influences of transient dynamics on outcomes of infectious disease management strategies. *The Journal of Theoretical Biology*.
- 20. Hite, J.L.** 2020. Host age alters disease life history. A case study in zooplankton and its castrating pathogen. *Functional Ecology* 34:1522-1524.
- 19. Hite, J.L.**, A. Pfenning**, R. E., Vetter*, and C.E. Cressler. 2020. A high-throughput method to quantify feeding rates in aquatic organisms: A case study with *Daphnia*. *Ecology and Evolution* 1-7.
- 18.** Strauss, A.T., **Hite, J.L.**, Civitello, D.J., Shocket, M.S., Cáceres, C.E., and S.R. Hall. 2020. Genotypic covariation in mechanistic, non-linear components of parasite transmission. *Proc. Roy. Soc. London B*.
- 17. Hite, J.L.**, A. Pfenning**, and C.E. Cressler. 2020. Starving the Enemy? Feeding behavior shapes host-parasite interactions. *Trends in Ecology and Evolution*.

- 16. Hite, J.L.** and C.E. Cressler. 2019. Parasite-mediated anorexia, dietary context, and the evolution of virulence. *Integrated and Comparative Biology*.
- 15. Hite, J.L.**, M. C. Hughey, K.M. Warkentin, and J.R. Vonesh. 2018. Cross-ecosystem effects of terrestrial predators link treefrogs, zooplankton, and aquatic primary productivity. *Ecosphere* 9(9):1-14.
- 14.** Shocket, M. S., D., Vergara, A. Sickbert, J. Walsman, A.T., Strauss, **J.L., Hite**, M.A., Duffy, C.E., Cáceres, S.R., Hall. 2018. Parasite-rearing and infection temperatures jointly influence disease transmission and shape seasonality of epidemic. *Ecology* 99:1975-1987.
- 13. Hite, J.L.** and C.E. Cressler. 2018. Resource-driven changes to host population stability alter the evolution of virulence and transmission. *Philosophical Transactions of the Royal Society of London B* 373:1-10.
- 12.** Strauss, A.T., **Hite, J.L.**, M.S. Shocket, M.A. Duffy, C.E. Cáceres, and S.R. Hall. 2018. Colliding ecology and evolution of the dilution effect: Rapid host evolution rescues hosts from competition and disease but elevates the density of infected hosts. *Proc. Roy. Soc. London B*.
- 11.** Shocket, M.S., D. Vergara, A.J. Sickbert, J.M. Walsman, **J.L.Hite**, A.T. Strauss, M.A. Duffy, C.E. Cáceres, and S.R. Hall. 2018. Temperature drives epidemics in a zooplankton-fungus disease system: a trait-driven approach points to transmission via host foraging. *The American Naturalist* 191(4): 435-451.
- 10. Hite, J.L.**, R. M. Penczykowski, M. S. Shocket, K. Griebel*, A.T. Strauss, M. A. Duffy, C. E. Cáceres, and S.R. Hall. 2017. Allocation, not male resistance, increases male frequency during epidemics: a case study in facultatively sexual hosts. *Ecology* 98: 2773-2783.
- 09. Hite, J.L.**, S. Fernández-Beaskoetxea, D.C. Medina**, J. Bosch, and S.R. Hall. 2016. Joint effects of habitat, predators, host stage structure, and diversity on amphibian chytrid. *Proc. Roy. Soc. London B*. 283.
- 08. Hite, J.L.**, R. M. Penczykowski, M. S. Shocket, A.T. Strauss, M. A. Duffy, C. E. Cáceres, and S.R. Hall. 2016. Parasites destabilize host populations by shifting stage-structured interaction. *Ecology* 97: 439-449
- 07.** Strauss A.T., M.S. Shocket, D.J. Civitello, **J.L. Hite**, R.M. Penczykowski, M.A. Duffy, C.E. Cáceres, and S.R. Hall. 2016. Habitat, predators, and hosts regulate disease in *Daphnia* through direct and indirect pathways. *Ecological Monographs* 86: 393-411.
- 06.** Civitello, D.J., **J.L. Hite**, and S.R. Hall. 2014. Potassium enrichment stimulates the growth and reproduction of *Daphnia*. *Oecologia* 175: 773-780.
- 05.** Wojdak J. M., J. C. Touchon, **J.L. Hite**, B. Meyer*, and J. R. Vonesh. 2014. Consequences of induced hatching plasticity depend on predator. *Oecologia* 175: 1267-1276.
- 04.** Civitello, D.J., R.M. Penczykowski, **J.L. Hite**, M.A. Duffy, and S.R. Hall. 2013. Potassium stimulates fungal epidemics in a freshwater invertebrate. *Ecology* 94: 380-388.
- 03. Hite, J.L.**, C.A. Rodríguez Gómez, S.C. Larimer, A.M. Díaz-Lameiro, and R. Powell. 2008. Population densities and structural habitat use of St. Vincentian anoles. *The Caribbean Journal of Science* 44: 102-115.
- 02. Hite, J.L.**, D.S. Steinberg, and R. Powell. 2008. *Sphaerodactylus kirbyi*. *Catalogue of American Amphibians and Reptiles*. 852: 1-2.
- 01.** D.S. Steinberg, **Hite, J.L.**, and R. Powell. 2008. *Sphaerodactylus vincent*. *Catalogue of American Amphibians and Reptiles*. 853: 1-2.

Publications in review/revision/prep _____

25. A.C. Pfenning-Butterworth, R.E. Vetter, **Hite, J.L.**,. 2022. Natural variation in host defense strategies impacts both host and pathogen fitness
In revision

26. T. Carvalho,, D. Medina, L. Pontes Ribeiroa, D. Rodriguez, T.S. Jenkinsond, C. G. Becker L.F. Toledoa, and **Hite, J.L.**. Panzootic chytrid genotypes drive divergent infection dynamics in frogs with multi-lineage infections. *In revision*

27. L. M. Lagenza, J. Lee, B. J. Olson, **Hite, J.L.**, and T. Fritsche. A Novel 'One Health' Visual Approach to Understanding Antimicrobial Resistance Characteristics Among Humans, Bovines, and Canines. *In review*

Ongoing Grants and Fellowships

USDA-AFRI; (PI) 2023-2025

HARNESSING IRON METABOLISM TO LIMIT *Salmonella* IN PRE- AND POST- HARVEST POULTRY

NSF Ecology Evolution of Infectious Disease, (co-PI) 2022-2024

INTEGRATING DATA AND THEORY TO UNDERSTAND HOW HOST ECOLOGY, BEHAVIOR, AND IMMUNOLOGY DRIVE TRANSMISSION DYNAMICS ACROSS SPACE AND TIME IN A HELMINTH PARASITE WITH A COMPLEX LIFE CYCLE.

UW-Global Health Institute Seed Grant, (PI) 2021-2022

STAR: STOPPING ANTIMICROBIAL RESISTANCE: EXAMINING LINKS IN AMR BETWEEN LIVESTOCK AND HUMANS

Completed Grants

ICTR TL1 Postdoctoral Training Grant, (co-PI) 2022-2024

THE METABOLIC UNDERPINNINGS OF PATHOGEN VIRULENCE AND DRUG RESISTANCE

National Institutes of Health NRSA Ruth Kirstein Postdoctoral Fellowship (K32), (PI) 2018-2020

LINKING HOST ENERGETICS AND MULTIPLE HOST DEFENSES TO TRANSMISSION AND VIRULENCE EVOLUTION. CO-PIs: K.M. MONTTOOTH AND C.E. CRESSLER

University of Nebraska Core Facilities Grant 2018-2019

FLOW CYTOMETRY AND HIGH RESOLUTION MELTING (HRM) TO ISOLATE NEW BACTERIAL CLONES. CO-PI: C.E. CRESSLER

UNL Population Biology PoE Postdoctoral Fellowship (PI) 2016-2018

SHOULD PARASITES STABILIZE OR DESTABILIZE THEIR HOSTS? CO-PI: DR. C.E. CRESSLER

IU College of Arts and Science Dissertation Year Fellowship, (co-PI) 2015-2016

LINKING HOST ONTOGENY AND EPIDEMIOLOGY. DR. S.R. HALL

Environmental Protection Agency STAR Fellowship (PI) 2010-2013

LINKING HOST ONTOGENY AND EPIDEMIOLOGY.

Fulbright Foundation Research Fellowship (PI) 2009-2010

HARNESSING CROSS-CULTURAL RELATIONS TO IMPROVE CONSERVATION EFFORTS

Awards

2016 Hannah Kolodziejewski Award for Excellence in Research, Teaching, and Outreach

2016 SAS Audubon Society Donald R. Whitehead Conservationist of the Year

2009 VCU Outstanding Graduate Student of the Year

2008 Explorer's Club Research Award

K-12 Outreach

2014-Present Sassafras Audubon Society, Bloomington, IN. Conservation Co-Chair. Initiated and led local conservation program focused on a threatened bird, the Chimney Swift. Our project combines art and science and involves multiple groups (e.g., local schools and individuals with different developmental abilities, the parks department, and the local Science museum, Harmony school, and elementary summer camps.

Teaching

Superbugs, sex, and drugs: why modern medicine needs evolutionary biology

Spring 2023

LEAD INSTRUCTOR

- Undergraduate, 2-credits

Scientific Communication Seminar (PBS 930)

Fall 2022

LEAD INSTRUCTOR

- Graduate, 1-credit

Scientific Communication Seminar (PBS 930)

Fall 2022

LEAD INSTRUCTOR

- Graduate, 1-credit

Pedagogy and Professional Development

Teaching at UW: Start Spring Strong. Center for Teaching, Learning, and Mentoring. UW-Madison

January 2023

- Teaching for inclusive and supportive learning communities

Advancing Faculty Mentoring Practice. Wisconsin Institute for Science Education and Community Engagement

January 2021

Mentoring

Mentees (graduate students and postdoctoral fellows)

2021-Present

- Eldon Ager, Ph.D. Student, 2023-Present
- Jeremy Abels, PhD Student (co-Advisor), 2023-Present
- Dr. Justin Buchanan, ICTR Postdoctoral Fellow, 2021-2022