

Jessica E. Brown

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Education

2019-Present	The Pennsylvania State University, PhD Ecology . Expected graduation: May 2024 PI: Dr. Erika Machtinger Dissertation: <i>TICK-et to Success: Unraveling the Ecology of Host-Tick Interactions in Small Mammals</i>
2015-2019	The Pennsylvania State University, B.S. Wildlife and Fisheries Science, cum laude . Minor: Forest Ecosystems Embedded Course: Sustainable Agriculture, EARTH University, Costa Rica

Grants and Funding

2023	Ecology Service Assistantship Award, Penn State Huck Institutes of the Life Sciences (\$14,000)
2022	Veterinary Entomology Scholarship, Department of Entomology, Penn State (\$5,000)
2022	Medical, Urban, and Veterinary Entomology (MUVE) Student Travel Award, Entomological Society of America (\$500)
2019	Grant-in-Aid of Research, American Society of Mammalogists (\$1,500) <i>Tick choice and host behavior as critical drivers behind tick burdens on small mammals</i>
2019	Graduate Student Travel Award, Penn State College of Agricultural Sciences (\$500)
2019	Fund for Excellence in Graduate Recruitment Scholarship, Penn State College of Agricultural Sciences (\$3,000)
2019	Boyd E Wolff Gotcha Fund in International Agriculture Scholarship, Penn State (\$500)
2019	Frank Felbaum Scholarship, Pennsylvania Chapter of The Wildlife Society (\$500)
2019	Wildlife for Everyone Foundation Scholarship Recipient (\$500)
2018-2019	Robert T. Billin Memorial Scholarship, Penn State College of Agricultural Sciences (\$1,000)

Awards and Honors

- 2024 Evans Family Award for Graduate Student Extension Achievement in the College of Agricultural Sciences, Penn State (\$2,000)
- 2023 Second Place, Student 10-min Paper Competition, Entomological Society of America Annual Meeting
- 2023 Dr. Jan E. Humphreys Outstanding Student Award, Pennsylvania Vector Control Association (\$300)
- 2022 Second Place, Student Poster Competition, Stone Valley Forest Expo 2022
- 2021 Outstanding Student Presentation Award, Acarological Society of America Annual Meeting (\$400)
- 2021 Honorable Mention, National Science Foundation Graduate Research Fellowship Program
- 2020 Second Place, Student 10-min Paper Competition, Entomological Society of America Annual Meeting
- 2019 Second Place, Student Poster Competition, Entomological Society of America Annual Meeting

Publications

- Brown, J. E.**, H. S. Tiffin, A. Pagac, K. C. Poh, J. R. Evans, T. M. Miller, B. Herrin, T. Tomlinson, C. Sutherland, and E. T. Machtinger. 2023. Differential burdens of blacklegged ticks (*Ixodes scapularis*) on sympatric rodent hosts. *Journal of Vector Ecology*. 49(1): 44-52.
- Machtinger, E. T., E. R. Burgess IV, and **J. E. Brown**. 2023. Distribution of biting flies associated with swine production facilities in the Southeastern United States. *Journal of Agricultural and Urban Entomology*. 39(1): 9-20.
- Green, K. D., H. S. Tiffin, **J. E. Brown**, E. R. Burgess IV, and E. T. Machtinger. 2022. Evaluation of tick control tube month of placement and modifications to increase visitation by small mammals. *Ecosphere*. 13:7. e4155.
- Machtinger, E. T., **J. E. Brown**, and E. R. Burgess, IV. 2021. Landscape distribution and abundance of animal-associated adult filth flies on commercial swine facilities in North Carolina, US. *Medical and Veterinary Entomology*. 35: 633-645.
- Machtinger, E. T., H. R. Springer, **J. E. Brown**, P. Olafson. 2021. Sudden mortality in captive white-tailed deer (*Odocoileus virginianus*) with atypical infestation of winter tick (*Dermacentor albipictus*). *Journal of Medical Entomology*. 58:4. 1962-1965.
- Brown, J. E.**, T. M. Miller, E. T. Machtinger. 2020. Tick tubes reduce blacklegged tick burdens on white-footed mice in Pennsylvania, USA. *Journal of Applied Entomology*. 144:6. 542-545.

Fedele, K. J., K. C. Poh, **J. E. Brown**, A. Jones, L. A. Durden, H. S. Tiffin, A. Pagac, A.Y. Li, E. T. Machtinger. 2020. Host distribution and pathogen infection of fleas (Siphonaptera) recovered from small mammals in Pennsylvania. *Journal of Vector Ecology*. 45:1. 32-44.

Brown, J. E., P. Chuard, and E. T. Machtinger. Effects of blacklegged tick attachment on host behavior in *Peromyscus leucopus*. *Journal of Zoology*. *Submitted*.

Stickler, C., **J. E. Brown**, and E. T. Machtinger. Tick attachment as a driver of allogrooming in white-footed mice (*Peromyscus leucopus*) pairs. *In preparation*.

Invited Talks

Brown, J. E. October 2023. TICK-et to Success: Unraveling the Importance of Ecology for Effective Vector Control. Pennsylvania Vector Control Association Annual Meeting. State College, PA.

Brown, J. E. May 2023. “Tails” from the Field: The Wacky World of Wildlife Research. Pennsylvania Outdoor Writers Association Annual Meeting. State College, PA.

Machtinger, E. T. and **J. E. Brown**. December 2022. Exploring the Cause of Heterogenous Tick Burdens on Blacklegged Tick Hosts. Penn State Veterinary and Biomedical Science Department Seminar. University Park, PA.

Brown, J. E., J. R. Evans, and K. C. Poh. April 2021. Parasite Pu-Pu Platter: A sampling of PA’s Peculiar Pests. “Science on Tap” Event, Penn State Science Policy Society. State College, PA.

Instruction

2024	Instructor. Entomology 216N: Plagues through the Ages, Penn State. Co-teaching course for 70 undergraduate students in Spring 2024.
2023	Mentor. Erickson Discovery Grant, Penn State. Served as primary mentor for an undergraduate throughout the summer to design and complete an experiment using this funding.
2023	Instructor. Vector-borne Disease Bootcamp. Penn State Extension & Cornell University. Developed and co-taught one lecture on tick control and one field workshop on tick surveillance.
2022-2023	Guest lecturer. Entomology 457: Principles of Integrated Pest Management, Penn State. Developed and taught one lecture on integrated vector management in both years.
2021	Guest lecturer. Wildlife and Fisheries Science 447: Wildlife Management, Penn State. Developed and taught two lectures on understanding the basics of wildlife disease.
2021	Guest lecturer/facilitator. Entomology 216N: Plagues through the Ages, Penn State. Lectured and led four discussions with undergraduates on the history of plagues and their impact on today’s world.
2019-2022	Mentor. Taught field methods and animal handling to >20 undergraduate students, graduate students, and technicians.

Presentations

- Brown, J. E.** November 2023. Fool Me Once: Comparing acquired tick responses in three rodent hosts. [Student Oral Presentation Competition]. Entomological Society of America Annual Meeting. National Harbor, MD.
- Brown, J. E.** November 2022. A “Tail” of Two Rodents: Investigating connections between host behavior and tick attachment. [Student Oral Presentation Competition]. Entomological Society of America Joint Annual Meeting. Vancouver, BC.
- Brown, J. E.** November 2022. A “Tail” of Two Rodents: Investigating connections between host behavior and tick attachment. [Student Oral Presentation Competition]. The Wildlife Society Annual Meeting. Spokane, WA.
- Brown, J. E.,** K. C. Poh, and E. T. Machtinger. April 2022. Tick Safe: Surveillance on university-affiliated properties in central Pennsylvania. [Student Poster Competition]. Stone Valley Forest Expo. State College, PA.
- Brown, J. E.,** J.R. Evans, K. C. Poh, A. Maleki, and E. T. Machtinger. April 2022. Investigating behavioral drivers of differential blacklegged tick (*Ixodes scapularis*) burdens on sympatric rodent species. [Student Oral Presentation Competition]. Entomological Society of America, Eastern Branch Annual Meeting. Philadelphia, PA.
- Brown, J. E.** November 2021. Investigating behavioral drivers of differential blacklegged tick (*Ixodes scapularis*) burdens on two sympatric rodent species. [Student Oral Presentation Competition]. Acarological Society of America Annual Meeting. Virtual.
- Brown, J. E.,** T.M. Miller, and E. T. Machtinger. November 2020. Tick tubes reduce blacklegged tick burdens on white-footed mice in Pennsylvania, USA. [Student 10-min Paper Competition]. Entomological Society of America Annual Meeting. Virtual.
- Brown J. E.** October 2020. Differential tick burdens on small mammal host species in Central Pennsylvania. [Conference Presentation]. Pennsylvania Chapter, The Wildlife Society Annual Meeting. Virtual.
- Brown, J. E.** November 2019. Differential tick burdens on small mammal host species in Central Pennsylvania. [Student Poster Competition]. Entomological Society of America Annual Meeting. St. Louis, MO.

Other Publications and Media

- Struckhoff E., **J. E. Brown,** and H. S. Tiffin. 2023. “[How fast are ticks?](#)” Video produced for use by Penn State social media team.
- Poh, K.C., H. S. Tiffin, J. R. Evans, **J. E. Brown,** M. J. Skvarla, and E. T. Machtinger. 2021. “[Tales From the Field: Training Undergraduate Researchers for Fieldwork.](#)” American Entomologist *Field and Bench* Column. 67:1. 26-30.
- Brown, J. E.,** H. R. Springer, and E. T. Machtinger. 2021. “Winter Tick, *Dermacentor albipictus,* and its potential impact on white-tailed deer farms.” Penn State Extension. <https://tinyurl.com/39nv5vps>

Brown, J. E. 2021. Identifying nuisance flies of horses. Penn State Extension Learn Now Video. https://www.youtube.com/watch?v=BHN41rxI_2s&t=3s

Brown, J. E. 2021. Identifying nuisance flies for swine fly control. Penn State Extension Learn Now Video. <https://www.youtube.com/watch?v=HLpDCM5WknE&t=13s>

Brown, J. E. 2021. Understanding nuisance fly life cycles in swine facilities. Penn State Extension Learn Now Video. <https://www.youtube.com/watch?v=HLpDCM5WknE&t=4s>

Service and Outreach

2023-Present	Cacao and Chocolate Research Network Member , Penn State
2019-Present	Vector-Borne Disease Team Member , Penn State Extension
2024	Outreach Educator , Tick-borne Disease Prevention. Pennsylvania Farm Show 2024.
2023	Symposium Moderator , “Connecting the Pieces: How Entomologists Tackle One Health Challenges and Influence Science Policy.” Entomological Society of America Annual Meeting 2023
2023	Panelist , First Generation Alumni Panel, Environmental Resource Management Program, Penn State
2023	Presenter , Penn State College of Agricultural Sciences Legislative Research Tour
2023	Outreach Educator , Tick-borne Disease Prevention. Penn State Ag Progress Days
2023	Outreach Educator , Tick-borne Disease Prevention. Pennsylvania Farm Show
2022	Outreach Educator , Tick-borne Disease Prevention. Penn State Ag Progress Days
2022	Webinar Presenter , “Tick Series: Tick Prevention on Companion Animals” Penn State Extension
2021	Webinar Presenter , “Tick Behavior and Protection from Ticks.” Pennsylvania Farm Show 2021
2021	Panelist , “Dismiss the Myths: Common myths about ticks, mosquitoes, and other vectors.” Pennsylvania Farm Show 2021
2021	Symposium Co-organizer , “Take a Walk on the Wild Side: Exploring the Intersection of Wildlife and Entomology.” Entomological Society of America, Eastern Branch. 2021 Virtual Meeting

- 2020 **Webinar Presenter**, “Tick Series: Ecology and How to Approach Control” and “Tick Series: Tick Protection Around the Home”
Penn State Extension
- 2020 **Webinar Facilitator**, “Tick Series: Protecting yourself from Tick Bites” and “Tick Series: Protecting your Horses from Tick Bites”
Penn State Extension
- 2020 **Outreach Educator**, Tick-borne Disease Prevention.
Pennsylvania Farm Show
- 2019 **Workshop Assistant**, Vector-borne Disease “Train the Trainer” Workshop. Penn State Extension
- 2019 **Outreach Educator**, Great Insect Fair. Penn State Department of Entomology

Leadership

- 2023-Present **Ecology Program Representative**, Penn State College of Agricultural Sciences Graduate Student Advisory Committee (*Nominated position*)
- 2023-Present **Northeastern Conservation Affairs Committee Lead**, The Wildlife Society
- 2023-Present **Member-at-large**, The Wildlife Society, Northeast Section
- 2022 **Vice President/Treasurer**, Penn State Ecology Graduate Student Organization
- 2021 **Secretary**, Penn State Ecology Graduate Student Organization
- 2018-2019 **Treasurer, Web Team Coordinator**, Penn State Student Chapter of The Wildlife Society

Relevant Employment History

- 2018-2019 **Laboratory Research Technician**
Veterinary Entomology Laboratory—University Park, PA
Responsibilities included: Maintaining insect colonies, conducting tick repellency bioassays, providing field and lab assistance to other students, assisting with data organization and analysis of data, mentoring incoming undergraduate research assistants.

Professional Society Membership

- 2018 - Present The Wildlife Society
- 2019 – Present The Entomological Society of America
- 2021 – Present Acarological Society of America