

Brooke Quinn

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Brown University
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RESEARCH INTERESTS

I am interested in the effects of perturbations on animal locomotion and performance, and the role that sensory systems play in maintaining robust movement. I use field- and lab-based approaches for my current research on bats as I design experiments to understand the biomechanics, morphology, and sensorimotor integration of this system.

EDUCATION

**Ph.D. Candidate in Ecology,
Evolution, & Organismal Biology**
Aug. 2020 – May 2026

Brown University, Providence, RI, USA
Advisor: Dr. Sharon Swartz
Committee: Dr. Beth Brainerd,
Dr. Kenny Breuer, Dr. Matthew Fuxjager

B.S. in Biology
Aug. 2016 – May 2020

Temple University, Philadelphia, PA, USA

PEER-REVIEWED PUBLICATIONS

- Kane, S.A., **Quinn, B.L.**, Wu, X.K., Xi, S.Y., Ochs, M.F., Hsieh, S.T. (2025). Unsupervised learning reveals rapid gait adaptation after leg loss and regrowth in spiders. *Journal of Experimental Biology*, 228 (12): jeb250243. <https://doi.org/10.1242/jeb.250243>
- **Quinn, B. L.**, Bajic, J. L., Romo, S. J., Wu, A., Bortoni, A., Breuer, K., & Swartz, S. M. (2025). Anatomical distribution and flight control function of wing sensory hairs in Seba's short-tailed bat. *The Anatomical Record*, 1–17. <https://doi.org/10.1002/ar.25679>
- Håkansson, J., **Quinn, B. L.**, Shultz, A. L., Swartz, S. M., & Corcoran, A. J. (2024). Application of a novel deep learning–based 3D videography workflow to bat flight. *Annals of the New York Academy of Science*, 1-15. <https://doi.org/10.1111/nyas.15143>
- Rummel, A.D., Sierra, M.M., **Quinn, B.L.**, and Swartz, S.M. (2023). Hair, there and everywhere: A comparison of bat wing sensory hair distribution. *The Anatomical Record* 1-12. <https://doi.org/10.1002/ar.25176>
- **Quinn, B.L.** (2020). Digest: Incomplete convergence drives form–function relationship in gliders*. *Evolution*, 74: 2746-2747. <https://doi.org/10.1111/evo.14115>

SUBMITTED WORKS

- Rummel, A.D., **Quinn, B.L.**, Kim, A.D., & Swartz, S.M. (2025). Regional heterothermy in tropical and temperate bats is exacerbated by flight and environmental temperatures. (submitted, in review).

GRANTS, FELLOWSHIPS, & AWARDS

National Science Foundation Graduate Research Fellowship

\$138,000

National Science Foundation, 2021

Doctoral Dissertation Enhancement Grant \$12,000
Dept. of Ecology, Evolution, & Organismal Biology; Brown University, 2024

Theodore Roosevelt Memorial Fund \$3,300
American Museum of Natural History, 2023

Anatomy Training Program
American Association for Anatomy, 2025

ORAL PRESENTATIONS

Quinn, B.L., Bajic, J.L., Romo, S.J., Wu, A., Bortoni, A., Breuer, K., & Swartz, S.M. 2024. *Sensory Hairs' Distribution and Impact on Flight Control in Seba's Short-Tailed Bat*. Talk presented at: North American Society for Bat Research; Guadalajara, Mexico.

Quinn, B.L., Rummel, A.D., Sierra, M.M., and Swartz, S.M. 2023. *Hair, there and everywhere: A comparison of bat wing sensory hair distribution*. Talk presented at: International Congress of Vertebrate Morphology; Cairns, Australia.

Quinn, B.L., Breuer, K., Bortoni, A., and Swartz, S.M. 2023. *Sensing on the fly: sensory hairs help bats battle turbulence*. Talk presented at: Society for Integrative and Comparative Biology; Austin, TX.

Quinn, B.L., Morales, A., and Simmons, N.B. 2020. *Predicting foraging strategies from morphological traits in Myotis*. Talk presented at: Society for Integrative and Comparative Biology; Austin, TX.

Quinn, B.L., Morales, A., and Simmons, N.B. 2019. *Predicting foraging strategies from morphological traits in Myotis*. Talk presented at: North American Society for Bat Research; Kalamazoo, MI.

Quinn, B.L., Xi, S.Y., and Hsieh, S.T. 2019. *Can learning facilitate perturbation recovery following autotomy?* Talk presented at: Society for Integrative and Comparative Biology; Tampa, FL.

Quinn, B.L., Xi, S.Y., Carter, A.M., and Hsieh, S.T. 2018. *Bending rules for terrestrial locomotion*. Society for Integrative and Comparative Biology; San Francisco, CA.

TEACHING

2022-23 **Teaching Assistant, Human Anatomy I & II**

2021-22 Warren Alpert Medical School of Brown University

Class of 150 first-year medical students with lecture and cadaveric lab components. Teach labs, work with students in groups and 1:1, grade assessments, create formative assessments, lecture once, host review sessions.

2021 **Teaching Assistant, Human Anatomy and Biomechanics**, Brown University
Class of 40 upper-level undergraduates. Teach labs, work with students in groups and 1:1, grade assessments, run cadaveric lab dissection sessions.

2020 **Teaching Assistant, Diversity of Life**, Brown University
Class of 100 lower-level undergraduates. Host office hours, be responsive to students via email, grade assessments.

COMPUTER & LABORATORY SKILLS

MATLAB
R
DeepLabCut
Python
High-performance computing cluster use
High-speed videography
3D video calibration techniques
Animal husbandry
Human and animal cadaveric dissection
Euthanasia techniques (in field and lab)
Electrode construction and insertion
Microchipping in small mammals
Fluorescence microscopy

MENTORSHIP

2024-25 **Undergraduate Researchers**
Brown University: *Santiago Romo, Andrew Kim, Gregory Lee, Ariel Wu, Yaffa Segal*. REU: *Zechariah Brown*

2023-24 **Undergraduate Researchers**
Brown University: *Joao Lima, Jade Bajic, Santiago Romo, Andrew Kim, Gregory Lee, Marcus Lewis, Ariel Wu, Alberto Lopez Resendiz*

2022-23 **Undergraduate Researchers,**
Brown University: *Chloe Finch, Jasmine Shum, Joao Lima, Santiago Romo, Andrew Kim, Marcus Lewis*. RISD: *Julie Park*

2021-22 **Undergraduate Researchers**
Brown University: *Rea Yoh, MC Vigilante, Sophia Sordilla, Jasmine Shum*

2020-21 **Undergraduate Researchers**
Brown University: *Emily Dai, Kiley Kellum*

CERTIFICATIONS & WORKSHOPS

2025 **Phylogenetic Comparative Methods Workshop**

2024 **Course Design Seminar**, Sheridan Center for Teaching and Learning

2022 **Teaching Certificate**, Sheridan Center for Teaching and Learning

SERVICE & OUTREACH

2024-25 **President, Graduate Student Association**, Brown EEOB

2023-24 **Vice President, Graduate Student Association**, Brown EEOB

2021 – **Skype a Scientist Speaker**

2020 – **Developed educational/informational website**, batflight.org

2020-21 **Polygence Mentor**