

Brooke Z. Torjman

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EDUCATION:

Doctor of Philosophy, Texas A&M University, College Station, TX 08/2021 – Present
Ecology and Evolutionary Biology Program

Bachelor of Science, Muhlenberg College, Allentown, PA: 05/2019
Major: Biology, Major GPA: 3.515, Cumulative GPA: 3.620

RESEARCH EXPERIENCE:

Hermit Crab Ecology Research, Muhlenberg College, Allentown, PA. 01/2019-05/2019

- Preparation of three manuscripts for publication (Principle Investigator: Erika V. Iyengar, Ph.D.)
- Project Title: A study of hermit crab shell selection
- Brief Project Description: Analysis of determinants of hermit crab shell choice and distribution of two species of hermit crabs in the field

Isopod Ecology Research, Muhlenberg Allentown, PA. 08/2018 – 12/2018

- Study of local stream isopod habitat preferences (Principle Investigator: Erika V. Iyengar, Ph.D.)
- Project Title: The habitat preference of stream isopod, *Lirceus fontinalis*
- Brief Project Description: Analysis of various benthic habitats to determine *L. fontinalis* location in the stream. Set up an artificial stream with habitat types allowing isopods to choose habitats. Speculated on evolutionary reasoning behind habitat preferences.

Summer Student Fellowship at Woods Hole Oceanographic Institution 06/2018 – 08/2018

- Selected applicant for student fellowship to investigate how differential feeding rates affect larval swimming behavior in the slipper snail *Crepidula fornicata* (Principle Investigator: Lauren S. Mullineaux, Ph.D.)
- Project Title: The effect of differential feeding rates on larval swimming behavior of the slipper snail *Crepidula fornicata*
- Brief Project Description: Mastered larval culturing techniques by rearing multiple hatches of *C. fornicata* larvae for experimentation. Filmed *C. fornicata* in various starved and fed treatments, developed expertise on use of LabVIEW and MATLAB programming software to analyze larval swimming behavior trajectories.

School for Field Studies Semester Abroad, Bocas del Toro, Panama 01/29/18 – 05/09/2018

- Completed an independent directed research project comparing the species diversity and abundance of mangrove prop roots and wooden dock pilings (Principal Investigator: Carolyn Kovacs, MS)
- Studying the vast, marine and terrestrial, ecological biodiversity
- Defining key island systems, both natural and human, and how they interface

Gastropod Morphometrics, continued research - Friday Harbor Laboratory's Blinks-BEACON Research Experience 08/28/2017 – 12/15/2017

- Study of gastropod shell growth at five different sites in relation to hermit crab shell selection behavior (Principal Investigator: Erika V. Iyengar, Ph.D.)
- Project Title: Gastropod Morphometrics Across Five Intertidal Sites in Washington state in Relation to Hermit Crab Shell Selection Behavior

- Brief Project Description: Expanded research started at Friday Harbor Labs on the study of hermit crab shell selection behavior by examining snail morphometrics. Studying differences among snail shells between different species across various sites in Washington state to determine how snails' shell growth affects the hermit crabs' shell selection at a site.

**Friday Harbor Laboratory's Blinks-BEACON
Research Experience for Undergraduates Fellowship**

06/12/2017 - 08/4/2017

- Selected undergraduate fellow to study intertidal marine hermit crab shell selection behavior (Principal Investigator: Erika V. Iyengar, Ph.D.)
- Project Title: The Ecological Ramifications of Snail Shell Use of the Hermit Crabs *Pagurus beringanus* and *Pagurus granosimanus*
- Brief Project Description: Studied the hermit crab species *Pagurus granosimanus* and *Pagurus beringanus* at various intertidal sites within two microhabitats on San Juan Island, Washington. Performed transect surveys at each site indicating proportional snail shell use by each species of hermit crab, then gave each of the hermit crab species the choice between 4 different shell types to understand the crab's shell selection in the wild.

PUBLICATIONS:

Torjman, BZ and Iyengar EV (2022) Increased potential for shell competition among intertidal hermit crabs (*Pagurus beringanus* and *Pagurus granosimanus*) in the rocky intertidal. *Journal of the Marine Biological Association of the United Kingdom*. doi: <https://doi.org/10.1017/S0025315421000837>

DiBenedetto M, Meyer-Kaiser KS, **Torjman BZ**, Wheeler JD and Mullineaux LS (2021) Departures from isotropy: the kinematics of a larval snail in response to food cues. *Journal of Experimental Biology* **224**, 1-9. doi:10.1242/jeb.239178

Torjman, BZ and Iyengar EV (In Revision) The burden of a hermit crab: a bevy of heavy shells for *Pagurus granosimanus* and *Pagurus beringanus*. *Journal of Experimental Marine Biology and Ecology*.

PRESENTATIONS:

B. Torjman, E. Iyengar, 2019, The burden of a hermit crab: a bevy of heavy shells, Lehigh Valley Ecology and Evolution Symposium, *Regional Conference*, Lafayette College, Easton, PA, April 13.

B. Torjman, L. Mullineaux, K. Meyer-Kaiser, J. Wheeler, J. Pechenik, 2019, Food affects swimming behavior of larval *Crepidula fornicata*, Biology research department presentation, Muhlenberg College, Allentown, PA, February 22.

B. Torjman, L. Mullineaux, K. Meyer-Kaiser, J. Wheeler, J. Pechenik, 2019, Food affects swimming behavior of larval *Crepidula fornicata*, The Society for Integrative and Comparative Biology, Tampa, FL, January 5. *National Conference*.

B. Torjman, L. Mullineaux, K. Meyer-Kaiser, J. Wheeler, J. Pechenik, 2018, Food affects swimming behavior of larval *Crepidula fornicata*, Muhlenberg College Research Symposium, Muhlenberg College, Allentown, PA, September 22.

B. Torjman, L. Mullineaux, K. Meyer-Kaiser, J. Wheeler, J. Pechenik, 2018, Food affects swimming behavior of larval *Crepidula fornicata*, Biology Summer Undergraduate Research Forum, Woods Hole Oceanographic Institution, Woods Hole, MA, August 9.

C. Kovacs, **B. Torjman**, M. Correiro, A. Eckert, L. Hamar, R. Hill, S. Martinez, E. Scott, K. Sisson, 2018, Epifaunal and fish assemblages associated with dock pilings in the Bocas del Toro archipelago, Community presentation for science communication, Bocas del Toro, Panama, May 6.

B. Torjman, E. Iyengar, 2018, Ecological ramifications of shell use by hermit crabs, The Society for Integrative and Comparative Biology, San Francisco, CA, January 5. *National Conference*.

B. Torjman, E. Iyengar, 2017, Ecological ramifications of shell use by hermit crabs, Biology research department presentation, Muhlenberg College, Allentown, PA, September.

B. Torjman, E. Iyengar, 2017, Ecological ramifications of shell use by hermit crabs, Muhlenberg College Research Symposium, Muhlenberg College, Allentown, PA, September 16.

FELLOWSHIPS/GRANTS:

Ecology and Evolutionary Biology Research Grant

2022

Texas A&M University/Association of Former Students Graduate Merit Fellowship	2021
NSF Research Experience for Undergraduates Fellowship – OCE-0850419	2018
NSF Research Experience for Undergraduates Fellowship – DBI-1262239	2017
The Crist Family Student Research Award in Biology Fund	2017

TEACHING EXPERIENCE:

Introductory Biology I Teaching Assistant, Texas A&M University, College Station	2021
Introductory Biology II Teaching Assistant, Texas A&M University, College Station	2022

HONORS/AWARDS:

Professional Development Certificate – G.R.A.D. Aggies Professional Development Certificate Program	2021
Dean’s List	2019
Second Place – Oral Presentation, Lehigh Valley Ecology and Evolution Symposium	2019
Fulbright Scholar Semi-Finalist	2019
Dean’s List	2018
Dean’s List	2017
Dean’s List	2016
Dean’s List	2015

EXTRACURRICULAR ACTIVITIES:

Reptile Caretaker, Churchville Nature Center, Churchville, PA	09/2020 – 12/2020
Top Naach, Bollywood Dance Club, Muhlenberg College, Allentown, PA	08/2017 – 05/2019
Students for Queen Advocacy, Muhlenberg College, Allentown, PA	08/2018-05/2019
2019 Class Council President, Muhlenberg College, Allentown, PA	05/2016 – 05/2019
Cardinal Key Society (Alumni Relations), Muhlenberg College, Allentown, PA	01/2016-05/2019
Biology Club, Muhlenberg College, Allentown, PA	08/2015-05/2019

WORK EXPERIENCE:

Lead Scientist, New Logic Marine Science Camp, Margate, NJ	06/2020-08/2021
Senior Outdoor Education Instructor, Pali Institute, Running Springs, CA	08/2019 – 3/2020
Host/Server, Robin Hood Restaurant, Southampton, PA	06/2019 – 08/2019
Peer Tutor, Muhlenberg College, Allentown, PA	01/2016-05/2019

SKILLS:

Languages: English (native), word processing
Field Techniques: Transect surveys, quadrat surveys, catch and release population surveys, advanced snorkeler, proficient in intertidal and underwater work
Lab techniques: SEM, micro-CT, 3D Slicermorph, microtome, staining and mounting slides, 3D printing, PCR, centrifuging, micropipetting, compound and dissecting microscopy, gel electrophoresis, caliper measurements, ImageJ, Microsoft Excel/Word/PowerPoint, SPSS, RStudio open source, larval culturing, hemocytometer counts
Miscellaneous: CPR/AED certified (June 2021), First aid certified (June 2021)
