



Rachel Crane

Ph.D. Student in Biology, admitted Autumn 2015

Bio

BIO

Rachel is interested in molluscan shell form. Animals' shells defend them from a variety of environmental dangers and predatory attacks, including a multitude of low-magnitude, repeated stresses, which could cumulatively cause lethal fatigue damage. She studies how shell features—from composition and microstructure to overall morphology—contribute to fatigue resistance. By developing new mechanical techniques to test shell fatigue resistance, she hopes to answer questions about the evolution of shell shape and the ecological interactions between hard-shelled molluscs, their predators, and the environment.

Rachel received her B.A. in Biology from Swarthmore College where she worked with Rachel Merz studying worm burrowing and distribution in the muddy intertidal zone. She then worked as the lab manager in Sheila Patek's lab at Duke University examining the behavioral strategies that mantis shrimp use when hammering open hard-shelled prey

LINKS

- Rachel's Website: <https://dennylab.stanford.edu/people/rachel-crane>

Research & Scholarship

LAB AFFILIATIONS

- Mark Denny (9/21/2015)

Publications

PUBLICATIONS

- **Smashing mantis shrimp strategically impact shells.** *The Journal of experimental biology*
Crane, R. L., Cox, S. M., Kisare, S. A., Patek, S. N.
2018; 221 (Pt 11)
- **Mechanical properties of sediment determine burrowing success and influence distribution of two lugworm species** *JOURNAL OF EXPERIMENTAL BIOLOGY*
Crane, R. L., Merz, R. A.
2017; 220 (18): 3248–59