



## Renae Brodie, Ph.D. (1976-Present)

Associate Professor, Department of  
Biological Sciences

Mount Holyoke College

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*"I truly can't imagine doing anything else." Renae Brodie, 2011.*

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### Overview

Dr. Renae Brodie is an ecological physiologist who investigates the reproductive and larval biology of crabs. Currently, she is studying fiddler crabs along the Atlantic coast, where she has established field sites from Massachusetts to Georgia to test hypotheses about how temperature and other factors— like population density, food supply and pollution—impact survival and reproduction. Some of her selected publications include:

- Staton J.L., Borgianini S.A., Gibson I.B., Brodie R.J., Greig T.W. 2014. Limited gene flow in *Uca minax* (LeConte 1855) along a linear estuary. *Central European Journal of Biology*. 9(1):28-36.
- Borgianini, S., Styles, R., Brodie, R. 2012. A simple model of megalopal transport in narrow-river dominated estuaries. *Marine Ecology Progress Series*. 452:179-191.
- Brodie, R., R. Styles, S. Borgianini, J. Godley, and \*K. Butler. 2007. Larval mortality during export to the sea in the fiddler crab, *Uca minax* (Le Conte, 1855). *Marine Biology*. 152(6): 1283-1291.
- Godley, J. and R. Brodie. 2007. The effect of summer storms on early life stages of *Uca minax*, *U. pugnax* and *U. pugilator* in North Inlet Estuary, SC, USA. *Marine Ecology Progress Series*. 342:197-204.
- Brodie, R. 2005. Desiccation resistance in the land hermit crab postlarva: ontogenetic changes in water loss rate and the role of the shell. *Invertebrate Biology* 124:265-272.

### Early Life and Education

Growing up in South Dakota as the daughter of medical professionals, mother Jane Gidley was a neo-natal intensive care nurse, and father Leon Brodie was a dentist, who excelled at math and science in school, it was assumed that Renae Brodie would become a doctor. But after working in a hospital as an undergraduate pre-med, Brodie found that she didn't like it [medicine] at all. However, she did like research science. And despite the fact that her only real exposure to water had come during her family's

yearly trips to Los Angeles beaches growing up, she was especially interested in marine science. When she found out that she could, indeed, make a living out of that as well, Brodie switched her major from pre-med to marine biology almost as a default, and has remained in the field ever since.

Brodie graduated from the University of California-Santa Barbara in 1991 with a B.S. in Aquatic Biology, then moved on to the University of Washington for a Ph.D. in Zoology. It was there that she would meet her most important mentor, her graduate advisor Alan Kohn. Despite the fact that Brodie was both the only woman and the only minority in his lab, she did not feel like she was treated any differently. “I was one of his last students. I came in at the end of his career,” she recalls. “He was old school. He had no problem showing displeasure, but he took a lot of time to mentor me and look over my work.”

Brodie says that minorities can sometimes face lower expectations in academic situations, especially in the sciences, but she did not feel that was the case in Kohn’s lab. “Sometimes it seems like, you’re the smartest black person we could find,” Brodie says. “For me it was nothing like that. I found that really refreshing. I don’t remember him ever referring to me as a black person. I was just another person in his lab.”

## **Career**

After obtaining her Ph.D., Brodie got a post-doc fellowship at the Smithsonian’s Marine Station in Florida, where she conducted research on the development of land-crab gills during the transition from marine to terrestrial environments. During that period, she was offered a tenure-track faculty position with the University of South Carolina’s Department of Biological Sciences. She deferred that temporarily to do more research on evolving animal morphology in Panama, but eventually accepted. Today, Brodie is an Assistant Professor of Biology Mount Holyoke College; though she spends most of her time conducting research on eco-physiology and larval biology, she also teaches courses in bio-physical ecology and animal behavior.

## **Mentoring Others**

Brodie mentors a number of undergraduate students in her lab; in fact, she considers being a good mentor the main focus of her career, and her most significant achievement thus far. “I’m still working on it,” she says. However, like her own mentor Alan Kohn, expectations for her mentees are high. “I recruit undergrads every semester, and one or two come with me every research season. [But] I don’t have to recruit so much anymore. I can screen and take the best ones. I get the very best people I can in here.”

## **Highlights**

Brodie is also the recipient of a National Science Foundation CAREER grant, which finances her work to increase minority representation in research science. Her diversity work emphasizes both research and education. In addition to mentoring a number of minority students in her lab, Brodie does science outreach programs in local, predominantly black elementary schools. We go into a school once a month and do hands-on science work directed by the children’s interest, usually a one to two hour lesson centered around a certain topic. Though Brodie admits that list can be somewhat eclectic—one unit was

entitled *Dangerous Birds*—and certain topics don't get covered, the idea is to get kids excited about science. "The main point is to interact with the kids, and foster their enthusiasm for science," she says.

Brodie says she remains in the environmental field because of the intellectual freedom and stimulation it provides. "I develop my own approach to research. It's completely self-directed and self-motivated," she says. "As long as I can find someone to fund my ideas, I can do whatever I want. It's intellectually invigorating. I love exchanging ideas with bright colleagues, and I get the opportunity to do a lot of traveling. I truly can't imagine doing anything else." Brodie notes the friendships and professional collaborations she has developed with colleagues as being the highlights of her career. Though it was difficult for her to establish herself each time she moved to a new position, she finds her ongoing relationships with her colleagues, students and mentees to be the most rewarding aspects of working in academia.

## **Advice to Young Professionals**

"What helped me get through grad school was hooking up with other minority grad students," Brodie says. Though the University of Washington did not have a diverse student population at that time, Brodie sought out other minority women in the sciences and formed a support network. "I found two other minority women in science departments, and the three of us stuck together and encouraged each other to finish," she says. Though she had friends within her own department, Brodie says it was a comfort to have others who understood the minority perspective. "It really helps to have other people who are actually experiencing the same thing and could empathize. It lowered my stress level considerably." Brodie recommends that young minorities pursuing environmental careers do the same: "If there are no minorities in their lab/department, seek out minorities in other science departments and build relationships with them."

## **For More Information**

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*This interview was conducted in 2015.*