

Meet the Heather crab, a newly discovered hermit crab species

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Credit: Florida International University

Heather Bracken-Grissom is having a crabalicious holiday season.

She was initially asked by Darryl L. Felder, her advisor from her Ph.D. days at University of Louisiana at Lafayette, to provide a DNA sequence for a little hermit crab discovered in the Gulf of Mexico off the coast of Louisiana. Less than an inch long and occupying hollow pieces of coral and other rock, the [species](#) is easily overlooked. But for someone who has worked on the National Science Foundation's Decapod Tree of Life project, providing a DNA sequence for this little hermit crab was not a problem.

Felder sent Bracken-Grissom a leg from the only sample of the species ever collected. She extracted DNA from the [muscle tissue](#) and sent the sequence back to Felder. That's when he called to tell her he was planning to name the species *Cancellus heatherae*. Actually, he said he had been planning to name it after her all along—a way to honor Bracken-Grissom's extensive contributions to molecular phylogenetic studies of decapod crustaceans, including works focused on hermit [crabs](#) populating the Gulf of Mexico.

"I'm totally content and super happy," Bracken-Grissom said. "Long after I die, I'm going to be known in hermit crab form, which is awesome. Having a species named after you is the ultimate honor. To have it done by your role models, I can't even describe how honored I feel."

The single sample—a female—was discovered among fragments of rhodoliths and small sponges dredged from an outer continental shelf bank in the northwestern Gulf. The actual reef where the specimen was

collected is known as a mesophotic reef, meaning a middle area where light is limited. Bracken-Grissom says these are exciting areas to search for new biodiversity as scientists embark on deeper dives.

To the untrained eye, the tiny crab might have been mistaken for a mud shrimp, especially since it was not sporting a stereotypical hermit crab shell. It was sent for identification to Felder who was not fooled and recognized the tiny creature for what it was—a new species of hermit crab. The seasoned biologist worked with Rafael Lemaitre, curator of Crustacea at the Smithsonian Institution's National Museum of Natural History and expert in hermit crab biology, to author the formal description. They recently published their findings in *Zootaxa*.

Small in stature and with festive coloring, *Cancellus heatherae* features several minor anatomical differences from other members of the genus *Cancellus* and is only named on the basis of a single specimen, due to the depth at which it was discovered. That specimen now resides at the Smithsonian along with 100,000 other decapod specimens collected during Felder's 40-year career at UL Lafayette. The retired professor donated them along with his research notes, photographs and electronic database to aid future crustacean research. The single *Cancellus heatherae* specimen serves as the permanent record for the description and name of the new species.

Though Bracken-Grissom has a long career ahead of her, she's already accomplished many things scientists only dream about. The marine evolutionary biologist is the first to identify an unknown species of monster larva as a shrimp and was part of an international team that captured the first-ever video of a giant squid in U.S. waters. She was recently named the associate director of the Coastlines and Oceans Division in FIU's Institute of Environment and is the North American governor for The Crustacean Society, an international academic society. And now, she'll be forever immortalized thanks to a tiny hermit crab

taking up residence in the Gulf of Mexico.

More information: DARRYL L. FELDER et al. A new species of the hermit crab genus *Cancellus* H. Milne Edwards, 1836 from a mesophotic deep bank in the northwestern Gulf of Mexico (Crustacea: Decapoda: Diogenidae), *Zootaxa* (2020). [DOI: 10.11646/zootaxa.4890.4.10](https://doi.org/10.11646/zootaxa.4890.4.10)

Provided by Florida International University

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