

# UNDERGRADUATE HELPS CONSERVATION THROUGH RESEARCH



**Heather the scientist: Shull gets important undergraduate experience, studying phylogenies of a species of Australian crayfish.**

Instead of going back to Seattle and getting a summer job close to home Heather Condie Shull is spending this summer in a laboratory on Brigham Young University's campus.

The senior zoology student is studying an Australian crayfish (genus *Euastacus*) as part of a larger study mentored by Dr. Keith Crandall in the Integrative Biology Department. She uses DNA samples to estimate the relationships between different species of the crayfish and to create a phylogeny (a biological family tree) for the genus. This information can be used for other research, including conservation, ecological and evolutionary studies. For example, BYU scientists and others around the world are trying to learn more about the symbiotic relationship between the *Euastacus* and a turbellarian worm that have co-evolved together.

Shull's desire to do research led her to contact Crandall last year to see if he had any openings on his research team. Along with a position on the research team, her mentor also informed her about the ORCA grant that has helped her continue with the crayfish study.

Her mentors not only include the Crandall, but also other experienced students. She says lab managers, Mike Carlson and Sarah Quinlan, have constantly given her useful advice on her work, and the Ph.D. students also go out of their way to offer assistance. It's a great environment," she says, "because there are so many people, and they all do different things. We can all learn from each other."



**The objects of her attention: Shull with a variety of crayfish.**

Shull is interested in her research project because it deals with conservation issues, an area she wants to continue being involved in after she finishes school. "Part of the goal of conservation is to keep around the biological diversity that we have right now," she says. Shull became interested in the subject from a high school biology class. "I had a really good teacher, and I can actually say that he

was the one who made me realize I wanted to study science.” She considers the teacher her first academic mentor.

The recently married senior will graduate from BYU next April and wants to continue studying conservation biology and/or animal behavior in graduate school.

When asked what might differentiate her from other students who don’t get into research, she says she likes the idea of learning something new and being more involved in that process. However, she adds that students won’t know if they like research if they don’t look into it. To her, research is for those students who want more from their college experience than just a traditional undergraduate education. “Research is great if you like to do things, discover things and understand things in a way that you can’t always get in a class.”

Slowly but surely, research for undergraduates is becoming the new tradition.