



Eastern Connecticut State University Biology Professor Matthew Graham holds a camel spider in his office recently. Below, Graham discusses the importance of studying the scary looking arachnids, which actually are not spiders at all. Roxanne Pandolfi | Staff

Hair-raising research at ECSU

Camel spiders may be an environmental tipster

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WILLIMANTIC — A little-known, eight-legged critter may play a key role in helping Eastern Connecticut State University researchers analyze the effect of climate change on desert environments.

But those researchers better not have arachnophobia.

These arachnids are not pretty and, even dead, they can still make the hearts of those who fear spiders palpitate.

ECSU is the recipient of a major grant from the National Science Foundation to fund research on camel spiders.

The four-year, \$500,000 grant will develop young scientists and contribute to the understanding of climate change in deserts.

The project is being led by biology professor Matthew Graham.

Students in Graham's lab at

Eastern, the Denver Museum of Nature and Science and the University of Colorado will collaborate to study the arachnids.

"We're trying to get an understanding of how desert ecosystems respond to climate change," Graham said. "Then we can better mitigate and figure out where the hotspots are and where we're going to lose the most diversity."

The project is just kicking off, but Graham is already analyzing some camel spiders in his office at Eastern.

His camel spiders are preserved in ethanol and are dead.

In fact, the spiders are notoriously difficult to find, collect and keep in captivity.

While camel spiders do have eight legs and are arachnids, they aren't actually "spiders" at all.

Instead, they are another type of arachnid called solifuges.

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Camel spiders key to research project at ECSU

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Solifuges don't have venom or make silk webs. However, they do have large jaw-like appendages to grab their prey.

During the project, students will collect DNA data from spiders in the American Southwest to learn about the spider's evolutionary history.

Graham said Eastern students have developed a new technique to collect many more spiders than before.

"After sequencing, we're going to

have tons of DNA data," said Graham. "We hope to team up with our math department and use bioinformatics to analyze all this data. Patterns in this DNA will show how populations of these desert animals have responded to climate change."

Graham said desert environments are predicted to undergo one of the most dramatic climatic changes in the next century or so.

The researchers can look at how species have reacted to climate change and

may react to future climate change.

Working with creepy crawlies is nothing new to Graham. He previously analyzed bacteria found in the abdomens of scorpions for its ability to develop new kinds of antibiotics. They were alive.

"This is somewhat new to me. I'm actually a scorpion expert, but scorpions are arachnids just like these," Graham said. "I like studying camel spiders because so little is known."

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