

Science Fair Project Sheds Light On Male Guinea Pig Calls

Male guinea pigs produce species specific purr

By Rachael Brugger

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It's never too early to make an impact on science research, one Massachusetts teenager found.

Alicia Duca, a senior at Bishop Fenwick High School in Peabody, Massachusetts, has been studying male guinea pigs courtship calls, an independent project that she has worked on for the past three years.

"All male guinea pigs, whenever they make this purr call, make exactly the same acoustic structure," Duca said she found through her studies. "They have no control over the variation."

She described the male guinea pig's call as a deep rolling sound resembling the rhythm of machine gun fire. She initiated the call for her experiments by placing a male guinea pig with a female guinea pig. Using spectrographic analysis, a technology that measures pitch by turning the sound into a digital image, she broke down the guinea pig's purr into specific measurements.

The lack of concrete substance in the field of animal communication is what motivated her research, she said.

"I live on a small farm so I've been working with animals my whole life," she said. "In high school I had a science fair and I decided to close that gap on the understanding of animal behavior."

This year, she entered her research into several science fairs – including the Intel Science Talent Search, where she won a semi-finalist position. She then expanded upon her study for the Massachusetts Science Fair by doing a cross-species comparison with a cat.

"An expert said only cats have a true purr," she explained. "I used the guinea pig as a model to compare with the cat and found that the guinea pig has a solid purr."

Duca will apply the cash prizes she received from her science fair winnings toward college tuition, she said. She plans on continuing her science education by studying behavior biology.