

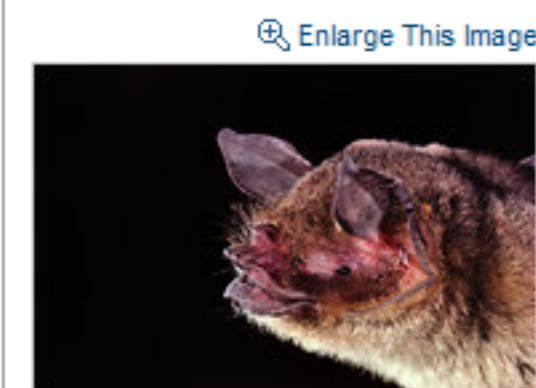
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OBSERVATORY

Bats Gauge Sounds With Neural Teamwork

By SINDYAN BHANOO Published: November 15, 2010

One of the keys to the keen ability of bats to process sound is that the neurons in a bat's brain work as a team to convey the importance of certain signals — like an anger call or a distress call — while diminishing the effect of less-important sounds, researchers at the Georgetown University Medical Center reported this past weekend in San Diego at the annual meeting of the Society for Neuroscience.



Merlin D. Tuttle/Bat Conservation International The neurons on the brain of a bat act "like a baseball team" to filter sounds.

"It's like a basketball team," said Bridget Queenan, a neuroscientist involved in the study. "There are neurons in the brain with these roles — like five guys on the court."

In different instances, depending on the particular signal that urgently needs to be processed, the neurons act in different ways.

For example, it could be that "one neuron processes the sound, another 'shushes' nearby neurons, and another helps boost the first neuron's activity," Ms. Queenan said.

She and her colleagues studied the bats by inserting electrodes into their brains and recording their neural activity after a series of tones and calls.

They used this to identify how individual neurons responded to calls in various instances, like when it was noisy or quiet.

"So now we start to see a little a bit how these players are working together in a specific context," she said. "It's as if we get snapshots of a game at different points of action."

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Studies like this one may help researchers better understand how the human auditory system works.

In humans, ambient noise, like traffic or background chatter, can be heard but ignored, whereas as important noises, like a baby's cry or an alarm, can trigger immediate reactions.

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