Channel Islands
CALIFORNIA STATE UNIVERSITY
DIVISION OF ACADEMIC AFFAIRS

California State University
INSTRUCTIONALLY RELATED ACTIVITIES
CHANNEL ISLANDS

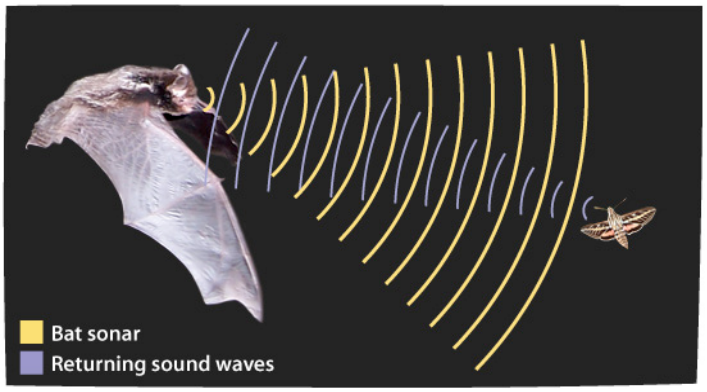
Undergraduate Math and Physics Seminar

Identifying Bats with Mathematics

Dr. Jason Miller

Professor, CSU Channel Islands

Abstract:
A long time ago, I was part of an interdisciplinary research team that had the goal of applying quantitative methods to the art of identifying free-flying bats (microchiroptera) from their (ultrasonic) echolocation calls. This is a bit like identifying birds from their songs, except it's not. Birds evolved song singing to identify themselves to conspecifics; bats evolved their echolocation abilities to hunt for food and avoid flying into things. This means that two different species of bat could have very similar echolocation calls. Though progress is being made on the quantitative identification of bats through acoustic means, the gold standard of identifying bats involves catching them, looking at them, and using morphological features to identify their species. This puts considerable stress on a bat, so non-invasive means to identify a bat to species would be a good tool for field biologists to have (especially when they must work with endangered bat species). This talk will describe the work I did with a faculty member from biology and some undergraduates in math and biology. We will speculate about the possibility of doing something similar on Santa Rosa Island.



When: Monday, September 17, 2017, 4:30-5:20 pm
Where: CSUCI, Del Norte 1530