# William E. Conner

**Professor of Biology at Wake Forest University**

Winston-Salem, NC, US

Conner is an expert in bat-insect interactions and in STEM entrepreneurship, particularly in bio-inspired design of new products.

## Biography

Conner is an international leader in the study of bat-prey interactions and in STEM entrepreneurship, particularly the application of principles inspired by biology to the design of new products. Conner's lab studies animal communication – how communicative signals are produced, travel through the environment, how they are detected, how the receiver responds to them, and ultimately how they have evolved. His research concentrates on bat/insect interactions. Conner and his students combine high-speed infrared videography, 3D-video reconstruction of behavior, classic behavioral observation, analytical chemical methods, electrophysiological techniques, and molecular phylogenetic analyses to explore communication systems that are often beyond humans' sensory capabilities. The Conner lab is currently studying the following topics: + Bat-tiger moth arms race: When a tiger moth hears the echolocation sounds of an insectivorous bat they answer with a series of ultrasonic clicks which serve several functions depending on the context. They can warn bats of a distasteful prey, deceive bats into thinking the prey is toxic, and even jam bat sonar making bats miss their targets. The more we learn the more surprises we find. His students recently discovered that bats also jam each other's sonar in order to gain an edge in food competition. The mechanisms that bats use to jam sonar are not unlike those used in military applications for jamming sonar and radar.

## Areas of Expertise

Animal Communication, Chemical Ecology, Bat Behavior, Human-Bat Interactions, Rearing Bats in Captivity, Bat Feeding Habits, Insect Defenses Against Predation, Animal Behavior, Bioacoustics, Sonar Jamming, Bioinspiration, Biomimicry

## Education

**Cornell University**
Ph.D.

**Cornell University**
M.S.

**University of Notre Dame**
B.A.