

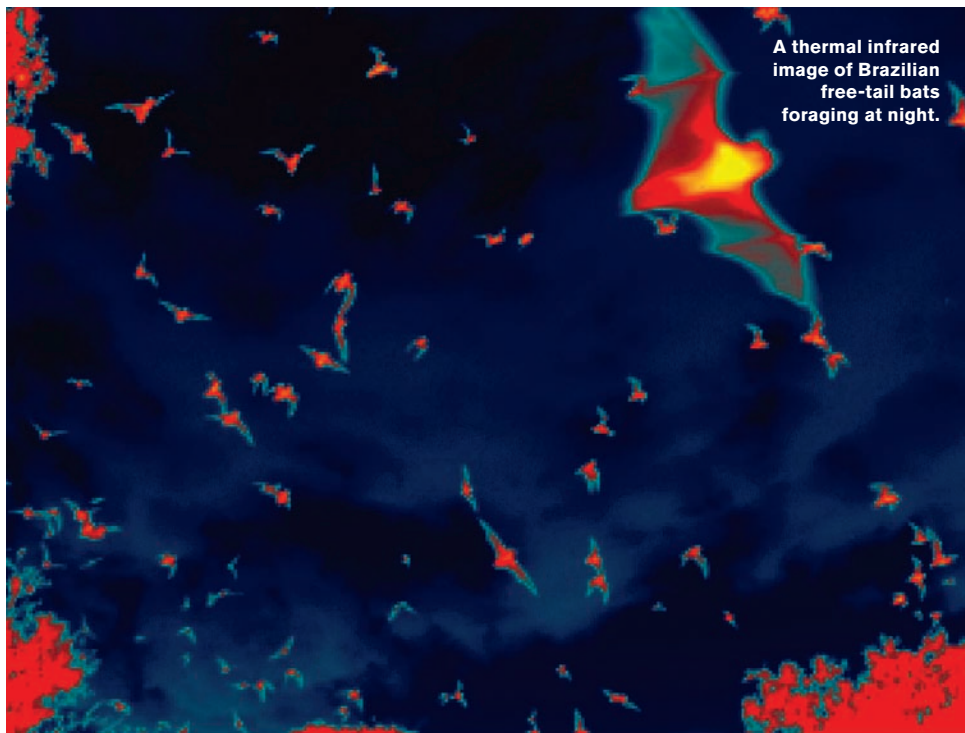
IN THE FIELD WITH BU'S BAT MAN

INFRARED CAMERAS AND ALGORITHMS COUNT MAMMALS FLYING IN DARK

ALTHOUGH THEY maintain a dignified silence, at least to human ears, bats get a raw deal: they are swatted at with brooms and tennis rackets and vilified in folklore.

In fact, bats are hardworking and beneficial creatures that rarely pose any real threat to people and only occasionally carry bacteria and viruses that cause disease. There are more than 1,100 species of bats in the world, of which only 3 feed on blood. Few, if any, bite humans without provocation. Many species do, however, love to chow down on insect pests that otherwise wreak havoc for farmers.

And they are voracious. They eat about two-thirds of their own body weight each night, making a significant contribution to the health of an ecosystem by suppressing insect populations, which in turn reduces the environmental and economic costs of pesticide use. To better understand just how beneficial bats are as a natural pesticide, Thomas Kunz, a College of Arts and Sciences professor of biology and an expert on these flying mammals, has spent the past two decades devising ways of assessing their impact on natural and agricultural ecosystems. Most recently, he's been working at a dozen caves in the corn- and cotton-producing Hill Country of south-central Texas. Depending on the time of year, he says, about 1.2 million to 1.4 million Brazilian free-tail bats inhabit a single cave.



A thermal infrared image of Brazilian free-tail bats foraging at night.

IMAGE COURTESY OF MARGRIT BETHE AND THOMAS KUNZ

In order for Kunz and his colleagues to assess the bats' ecological and economic value, they must first determine how many bats are present in the regions they're studying. Getting an accurate count isn't easy; bats roost in dark places during the day and fly at night. The challenge, Kunz says, "is to observe in the dark and to minimize disturbance to them."

He and his team use advanced thermal infrared cameras, which detect the heat produced by bats, and sophisticated computer algorithms developed by colleagues in the University's computer science department to count the bats as they emerge nightly from the caves. Even though they stream out in dense columns, Kunz says, the technology makes it possible to "actually count just about every bat that passes through the camera's field of view."

EDWARD A. BROWN

 **web extra**

LEARN HOW THOMAS KUNZ COUNTS BATS AT WWW.BU.EDU/BOSTONIA.

PROFS GRADE THE UNIVERSITY

Overall, Boston University professors like their jobs but see room for improvement in areas such as salary and opportunities for female and minority faculty, according to a survey conducted last fall by Boston University's Council for Faculty Diversity and Inclusion.

"The intent was to discover what matters most to our faculty and to find out the areas in which we, as a university, need to improve," says University Provost David Campbell.

The picture at BU is largely positive. About 70 percent of respondents on both campuses said they were either somewhat satisfied or very satisfied with being a BU faculty member. The survey revealed a marked difference between Charles River and Medical Campus faculty when it came to salary satisfaction. The majority of Charles River faculty (56 percent) said they were dissatisfied with their pay; on the Medical Campus, about the same proportion of faculty (57 percent) reported being satisfied. Charles River faculty also gave lower marks than their Medical Campus counterparts to the treatment of BU's female and minority faculty. The full survey results are available at www.bu.edu/diversity/survey.html. CHRIS BERDIK