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## **Bahama Oriole Project team awarded NSF grant to offer more UMBC undergrads international research experiences**

UMBC is **recognized as a national leader in undergraduate teaching**, in part because the university connects so many students with meaningful research opportunities. Now, a new \$300,000 NSF International Research Experiences for Students grant will enable one team of UMBC faculty across three departments to offer research and cross-cultural learning experiences to even more students.

**Kevin Omland**, professor of biological sciences and the lead on the new grant, sees student research as essential to science, and both undergraduate and graduate students have played a major role in his international field research for decades. Many students have gotten involved through the Bahama Oriole Project, a collaborative initiative with Bahamian scientists and conservationists to save the critically endangered Bahama Oriole.

The project began in 2016 and has taken eight students to the Bahamas for research so far. “It’s a great opportunity for students to make a huge impact,” Omland says. “The students have already made many key contributions.”

### **International advantage**

**Matthew Kane** '19, biological sciences, has been to the Bahamas twice with Omland. Before his first trip, he’d never been on a plane. “My third flight was a rough charter to Andros Island,” Kane says. On the most recent trip, he collected data to measure rat populations on the island. The rats are known to consume oriole eggs, and Kane wants to figure out how severe a threat they are to oriole populations.



A Bahama Oriole on a pine branch. UMBC undergrads were the first to discover the species nesting in the pine forest, suggesting they may have more habitat remaining than previously understood. Photo by Matthew Kane '19.

Kane selected and ordered peanut butter-scented wax baits, worked with other students to set them out in strategic locations, and then regularly checked them for tell-tale bite marks indicating the presence of rats. Being a star on UMBC's cross country team certainly helped as he traipsed miles through the dry pine forest, day after day.

“Being on the Bahama Oriole Project was my first hands-on glimpse at international research,” Kane says. “It was the first time I had seen scientists from two different countries collaborating on a conservation project on this scale.” The relationships Omland has developed with local scientists and the Bahamas National Trust are huge assets in the work to save the Bahama Oriole, and in creating a memorable student experience.

Traveling to the Bahamas and developing his own relationships with Bahamian scientists “showed me how important it is to have these diverse perspectives in projects like this,” Kane says, “because having the expertise of the Bahamas National Trust as well as this lab is

giving the project a much bigger boost than if only one or the other was working on it.”

## **Creating opportunities**

This is exactly the kind of reflection Omland and his UMBC colleagues on the grant—**Matthew Fagan, Jane Arnold Lincove, and Colin Studds**—hope to hear from students. Through the project, “students can get a sense of endangered species, and climate change, and some of the challenges that are unique to island species, but it’s also an amazing cultural opportunity for them,” Omland says.

“It’s like a combination of being an exchange student and being a researcher,” adds Lincove, associate professor of public policy. Many of the students who participate may have had limited opportunities to travel previously, adding to the experience’s impact.

“UMBC is a younger school with lots of recent immigrants, first-generation college students, and underrepresented minority students who might not have had a chance to go to summer camp in the Rockies or go to France with their parents to see museums,” says Omland. “This project provides an amazing opportunity for these students.”



Matthew Kane (left) and fellow researcher Briana Yancy '18 in the Bahamas.

### **Interdisciplinary efforts**

On top of that, “the students from different disciplines are going to have to learn how to communicate with each other,” says Fagan, assistant professor of geography and environmental systems. The project includes students studying biology, geography, and statistics, and Omland is open to recruiting students from other relevant fields. The diversity of expertise will allow the group “to tackle a real diversity of problems,” Fagan adds.

In addition to Kane’s predator work, Fagan will help students make detailed habitat maps of the island. The mapping work will include boots-on-the-ground fieldwork as well as take advantage of “fun 21<sup>st</sup> century technologies” like remote sensing, Fagan explains. It could help the team investigate how fire affects the island’s ecosystems or predict how sea level rise may change the availability of habitat for the orioles and other species.

Studds, assistant professor of geography and environmental systems, has been working with a student to improve population estimates for

the Bahama Oriole using cutting-edge statistical techniques. He'll also look at predator populations.



fledgling Bahama Oriole in a thatch palm tree. Photo by Matthew Kane '19.

### **Looking to the future**

Lincove has a different role to play. She and her graduate students will evaluate the project, so the researchers “can think about what they want to do in the next year and if it’s meeting their goals for what they want the students to get out of it.”

Lincove’s team will interview the students several times, up until graduation and potentially beyond. They’ll be looking at whether research in the Bahamas influenced the students’ career paths, academic performance at UMBC, and other outcomes. Because of the international factor, her team will also look at whether the experience changes how students think about other cultures.

The results will be helpful for the Bahama Oriole team in planning future student research trips, and the experience will also be valuable for Lincove's policy students. "I'm trying to give our students hands-on evaluation work to do," she says. Working directly with UMBC faculty and students rather than being handed a gigantic database by a distant corporation, she explains, "makes it a better learning experience for my students."

Overall, "a major goal of the grant is to increase the diversity of students and researchers interested in and working on environmental science and ecology conservation projects," Omland says. This might sound like a lofty goal, but he feels confident that UMBC is well-positioned to make this vision a reality, and to keep producing high-quality, high-impact science along the way.

*Banner image: Omland, Michael Rowley '18, Cierra Mckoy '20, and Yancy set up a mist net that temporarily captures birds for data collection. Photo by Matthew Kane '19.*