

## Faculty Profile: Michael Rex, Professor of Biology

Michael Rex, Professor of Biology at UMass Boston, investigates deep-sea community ecology and has recently co-authored a book, with colleague Ron Etter, also of UMass Boston, called *Deep-Sea Biodiversity: Pattern and Scale*, Harvard University Press.

Rex—who has taught and conducted research at UMass Boston since 1972—explores communities in the deep North Atlantic, a very recently established field, where “almost anything you see is new,” Rex says.

“It’s a dark, frigid, low-energy environment,” Rex says, “and I’m interested in asking the questions: How do they exist? How did they evolve?”

“Evolutionary theory is based almost entirely on terrestrial and marine coastal systems, but the deep sea covers 2/3 of the planet. There’s a lot going on down there, and it’s an important and integral part of life on the planet. Without information from the deep sea, our understanding of ecology and evolution on Earth is very incomplete.”

Deep-sea organisms subsist on plankton from surface waters that trickles down for miles through the water column to the seafloor. Rex uses satellite measures of surface production to predict how much food supply reaches the deep sea and is available to fuel seafloor communities.

“Basic ecology is the most interesting thing to me,” Rex says. “And explaining biodiversity is what basic ecology is all about.” Rex says that understanding how deep-sea organisms live and evolve could be a “great advantage to mankind.”

For example, the deep sea contains vast mineral wealth—including petroleum and economically important metals. Rex and his colleagues in the field are now attempting to determine whether these resources can be harvested in an environmentally safe and sustainable way.

In addition to his research, Rex acts as associate editor to two research journals, *Global Ecology and Biogeography* and *Marine Biodiversity*, where his responsibilities include managing the peer-review process and recommending publication decisions.

Rex teaches both undergraduate and graduate courses—which have ranged from basic biology, population biology, ecology, and marine invertebrate zoology to advanced biogeography. He describes his experience as both a teacher and researcher at UMass Boston as “gratifying.”



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“Teaching undergraduates is just fun,” Rex says. “You never get jaded because the students are so energetic. With undergrads—that’s how you learn to teach. They need general knowledge, but they also respond well to challenging material that they find interesting and manageable.”

Part of UMass Boston’s mission is to provide a learning environment where diversity among the student population is paramount.

“It’s really nice to be around a high diversity of young people,” says Rex. “They have tremendous energy, and are from all different backgrounds and nationalities.”

One of his recent undergraduate courses included 20 nationalities—the students as individuals make his position as a teacher worthwhile.

“These people have chosen to learn,” he says. “These are bright kids. Their hard work is gratifying. I like the students, and I like to teach.”

UMass Boston, says Rex, “has permitted me to have a balanced career between undergraduate and graduate teaching, research, and public and professional service.”

Although the university has greatly expanded its academic programs through time, Rex says that UMass Boston is “still a place that takes great pride in teaching” while also functioning as a leading research institution. “This is a place that nourishes a balanced career.”

- Current Grants: \$145,637 funded by National Science Foundation (out of \$3+M total)
- Publications: 1 book, more than 70 co-authored journal articles, reviewer for many scientific journals, including Science, Nature, and PNAS.
- Recognition: 2002 recipient of the Chancellor’s Distinguished Scholarship Award