

C-FACS faculty members and their graduate/undergraduate assistants are involved in a broad spectrum of field and laboratory research programs targeted at wildlife ecology, conservation, and protection. In an effort to enhance membership awareness, communication and collaboration, C-FACS periodically highlights select research initiatives via the

C-FACS Research and Resource Spotlight

UCO Aquatic Invertebrate Research and Curation Program (UCONHM)

Dr. T. David Bass, Department of Biology

Dr. David Bass's research lab studies invertebrate biodiversity and aquatic ecology. This lab group also oversees and curates the Invertebrate Section in the UCO Natural History Museum. Dr. Bass and his students are especially interested in the distributions, abundances, ecological roles, and natural history of aquatic macroinvertebrates. They endeavor to learn why these organisms live where they do, understand what they do in the environment, and determine how they are adapted to do so.

University of Central Oklahoma Natural History Museum – Invertebrate Section

The Invertebrate Section of the University of Central Oklahoma Natural History Museum is divided into three collections: 1) Teaching Collection, 2) Aquatic Insects Collection, and 3) Caribbean Freshwater Invertebrates Collection. These specimens are curated by Dr. David Bass and students working under his direction. Much time and effort is spent maintaining specimens and updating taxonomy in this continually growing section of the museum.



Teaching Collection

Specimens housed in this collection are examined and studied by students enrolled in Invertebrate Zoology, Aquatic Entomology, Marine Ecology, Freshwater Ecology, Entomology, and Oklahoma Field Biology. The teaching collection is composed of a great diversity of specimens from around the world currently representing 24 phyla of animals.

Aquatic Insects Collection

Most of the specimens in the aquatic insect collection came from habitats in Oklahoma, Texas, and Colorado. Many of these were collected by Dr. Bass as he travelled through the region and by students enrolled in UCO classes, especially Aquatic Entomology. All recognized orders of aquatic insects are represented in this collection.

Caribbean Freshwater Invertebrates Collection

The UCO Natural History Museum currently has one of the world's largest collections of freshwater invertebrates from the Caribbean region. Dr. Bass has made numerous research trips to small islands across the Caribbean basin during the past 30 years and many of his specimens have been deposited in this collection. These specimens are noteworthy because, in many cases, they came from the only collections ever made from most of those islands. In addition, many of the organisms deposited here are endemic to the island from where they were collected.



Collaborative Research and Publications

It should be noted that an area of the UCONHM invertebrate section is dedicated to storage of voucher specimens from previous research projects and theses. More than half of the specimens in the Invertebrate Section were collected by Dr. Bass. Furthermore, over 40 published papers by Dr. Bass and his students are associated with specimens deposited in the invertebrate collection. Finally, several additional papers have been published by other researchers to whom specimens from this collection were loaned.

Oklahoma Studies. Many investigations of macroinvertebrate community structure and ecology of streams, ponds, reservoirs, springs, and temporary pools have been conducted across Oklahoma. Several of these studies have occurred on public lands, such as state parks and recreation areas,

throughout the state. Additional investigations have occurred in cooperation with The Nature Conservancy on properties they own and manage in Oklahoma. Other projects involving invertebrate biodiversity and water quality have taken place on state and tribal nation lands. Advanced students with the appropriate academic background are often involved in these projects.

Caribbean Studies. Dr. Bass has been conducting invertebrate biodiversity and related ecological studies on small Caribbean islands since the 1980's. Some of the islands in these investigations include Barbados, Antigua, St. Kitts, Nevis, Montserrat, Saba, Dominica, Grenada, Tobago, Mayreau, Guanaja, Cozumel, and the Cayman Islands. He is currently engaged in several on-going projects occurring on Grand Cayman: 1) long-term monitoring of invertebrate communities in selected freshwater habitats, 2) invertebrates of anchialine caves, 3) impact of an introduced crayfish on freshwater invertebrate community, and 4) changes in the groundwater community as eutrophication from surface nutrients permeate the ground. Recently a multi-year investigation of the population structure and reproductive migration of Cayman's land crabs was completed. Specimens from all of these studies have been deposited in the Caribbean Invertebrate Section of the Invertebrate Collection. **The UCO Natural History Museum – this now contains one of the largest collections of Caribbean freshwater invertebrates in the world** and numerous international collaborations have resulted.

Recent Inaugural Meeting of the Latin America and Caribbean Congress for Conservation Biology

Dr. Bass recently participated in the *Inaugural Meeting of the Latin America and Caribbean Congress for Conservation Biology* in St. Augustine, Trinidad. This event was sponsored by the Society for Conservation Biology and the University of the West Indies. He presented the latest findings from studies of subterranean crustaceans in the Cayman Islands. Although Dr. Bass was the only invertebrate zoologist in attendance, he reported it was a great gathering of conservation biologists working in that region. He also noted that it was wonderful conversing with the many passionate young scientists from developing nations who were extremely knowledgeable and dedicated to their work. Besides participating in the conference, Dr. Bass was invited to spend part of a day examining specimens, especially aquatic invertebrates, in the UWI Museum.





**For further UCO Aquatic Invertebrate Program information, additional research and teaching details and opportunities for future collaboration, contact:
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