

**Barry M. OConnor**

bmoc@umich.edu

## Evolution and Ecology of Mites and their Hosts

Research in my laboratory focuses on the evolutionary and ecological associations between arthropods, mainly mites, and other organisms (vertebrates, insects, fungi & plants). Since most of the mites in these systems are undescribed, we begin by describing and documenting the associations, often in collaboration with other biologists studying the hosts. Systematic studies of the mite lineages follow, involving both morphological and molecular data. Finally, comparison of host and symbiont phylogenies allows the history of the associations to be discerned.



Undergraduate students begin by learning basic techniques of specimen collection, including processing host specimens for external symbionts, specimen preparation, data handling and museum curatorial practice. Most specimen work is carried out under a dissecting microscope. More advanced students actually describe new species, including taking morphometric measurements or DNA analysis. Some basic training in scientific illustration is provided.

Current projects involve studies on parasitic mites of birds and mammals in the Philippines, Indonesia, Madagascar, Tanzania, and Peru. Other current projects include studies on mite associates of North American bees, and mite associates of bees, wasps and termites from various parts of the world.

