

**Speaker:**

Eric Benbow

Professor

Department of Entomology
Michigan State University**Date:** Monday, Feb. 28, 2022**Time:** 4:00 pm - 4:50 pm**Zoom:** 948 0131 1028**Passcode:** 347039**Title:**

“Deciphering the Role of Necrophagous Insects and Postmortem Microbiomes in Decomposition Ecology and Applications in Forensics”

Abstract:

The necrobiome is the community of organisms that use or are affected by decomposing organic matter. Decomposing organic matter comes in the form of dead plant matter (biomass) or that of dead animals, including humans. Using research into how these communities (e.g., insects, pollen, microbes) colonize, use and change during the decomposition of vertebrate carcasses can inform science with potential forensic utility. An established area of carrion decomposition science is the role of insects in recycling these ephemeral resources; however, an emerging area of forensic research has been on postmortem microbiomes and how they have potential to estimate postmortem intervals, postmortem submersion intervals, manner/cause of death and other areas of investigative interest. While recent research on postmortem microbiomes shows excellent promise, there are several challenges that will limit practical use during death investigations; these issues span from basic experimental design and context to understanding the extent of variability in postmortem microbiomes across human demographics, ethics, geography and time. A key question has centered on how necrophagous insects interact with carrion microbial communities, and how these interactions affect decomposition and forensic utility. This presentation will provide an introduction to the necrobiome commonly associated with decomposing animals, including humans; a summary of past and current research into forensic entomology and postmortem microbiome science; example case studies; and a discussion of the challenges of using insect and microbiome evidence within the forensic sciences.