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Characterizing the microbial assemblages of *Perimyotis subflavus* in traditional and non-traditional hibernacula and screening community members for antagonism with *Pseudogymnoascus destructans*

Pseudogymnoascus destructans (Pd) is a fungal pathogen that has been circulating in North American bats since its initial discovery in 2006. Pd is the causative agent of white-nose syndrome (WNS), a disease leading to as much as a 90% decrease in some eastern United States bat populations. To date, there is no effective probiotic for WNS, probiotics inoculums have shown success in the management of chytridiomycosis in amphibians. Host microbiomes have come under investigation in other disease systems for their perceived connection with pathogen colonization and disease severity across taxa. To this end, our research will focus on characterizing the microbiome of tri-colored bats (*Perimyotis subflavus*) across non-traditional (i.e.: manmade) and traditional hibernacula. Tri-colored bats have been documented living in anthropogenic structures (e.g.: culverts, bridges) which maintain temperatures consistent with Pd growth requirements yet have not been classified as having WNS. Because built environments are correlated with altered host microbiomes, I aim to differentiate tri-colored bat microbiomes across traditional and non-traditional hibernacula. By characterizing these microbiomes, I will identify microbes displaying anti-fungal properties, which will then be tested *in vitro* for anti-Pd activity. We will fill a gap in the knowledge of how bat microbiomes impact host survival, while identifying microbial candidates for possible probiotic treatments. These treatments may be applied as a minimally-invasive disease management tool for summer treatments of bats in order to mitigate the effects of WNS on bat populations.