

Feb 7th, 11:30 AM - 12:30 PM

Undergraduate Research in Biology III: Causes of Avian Mortality

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11:30 AM - 12:30 PM (Room 1310)
Undergraduate Research in Biology III
Causes of Avian Mortality

Chair: Dr. Eric Walters, Department of Biological Sciences

The Effects of Avian Foraging and Nesting Behavior on the Probability of Tick Parasitism

By **Dorothy R. Paine, Erin L. Heller, Chelsea L. Wright**

(Mentors: Dr. Holly Gaff, Dr. Eric Walters)

There are seven species of hard-bodied ticks commonly found in coastal Virginia, that parasitize birds during their larval and nymph stages. In 2014, mistnets were used to trap birds at five sites in coastal Virginia. Birds caught in the mist nets were banded, and ticks, if found, were removed from the birds and sorted by species and life stage, using morphological methods. The most parasitized bird species was the Carolina Wren (*Thryothorus ludovicianus*). Data show a relationship between the amount of time a bird is expected to spend foraging or nesting on the ground and the number of ticks found.

Fatal Window Collisions: Which Avian Families Are Most Susceptible?

By **Ally S. Lahey, Natasha D. G. Hagemeyer, Annie M. Sabo** (Mentor: Dr. Eric Walters)

Approximately 500 million birds die each year in North America from fatal window collisions. Most research efforts have focused on building characteristics, but recent studies have suggested that some species of birds are more susceptible to window strikes. We investigated species-specific susceptibilities to fatal window collisions during fall migration at the Virginia Zoological Park from 2012-2014. We combined daily window strike surveys with weekly mist-netting to examine family likelihood of fatal window collision. Thrushes (*Turdidae*) were the most common avian family captured, but were a low proportion of fatal window strikes. Wood-warblers (*Parulidae*) were the second-most common avian family captured (22%), but comprised 62% of all fatal window collisions. Mimids (*Mimidae*), cardinals (*Cardinalidae*), and sparrows (*Emberizidae*) all struck windows at lower proportions than available in the area. Accipiters (*Accipitridae*) and hummingbirds (*Apodidae*) struck at higher than expected proportions, but these families are unlikely to be captured in mist nets.

Are Younger Birds More Prone to Window Strike Mortalities?

By **Annie M. Sabo, Natasha D. G. Hagemeyer** (Mentor: Dr. Eric Walters)

Windows cause the deaths of approximately 500 million birds per year in North America. A high number of window strikes occur each fall at the Virginia Zoological Park (Norfolk, VA), thus a collaborative mist-netting effort was conducted during fall migration 2013/2014. The goal of this study was to compare age ratios of avian migrants naturally found at the zoo with those that struck windows. We hypothesized that disproportionately more juveniles would strike windows since juveniles would likely be less experienced with anthropogenic structures. The proportion of juveniles striking windows (54.6%) was not significantly different ($Z=-0.76$, $P>0.05$) than the population of birds naturally occurring at the zoo (57.1%). Because results were unexpected, we would like to conduct future studies to better understand how these migratory birds are using the zoo as a stopover habitat, which would lead to window design efforts to help prevent collisions.

Avian Malaria in Virginia

By **Jessica Asfari, Chelsea L. Wright** (Mentor: Dr. Eric Walters)

Avian malaria is a deadly disease that affects birds in many different areas. It is caused by the parasite *Plasmodium* and its disease vector is the *Culex* genus of mosquito. Symptoms include gross and microscopic lesions, hyperplasia, and anaemia. Blood samples were obtained from 87 birds captured in June and July of 2013 at various sites in the Hampton Roads area of Virginia. The blood collected was tested for the parasite *Plasmodium*. Five birds tested positive for *Plasmodium relictum*. These findings suggest that avian malaria is well established in southeastern Virginia. Further study will allow a determination of whether this disease is causing a decline in native bird populations.