

**WIU CENTENNIAL HONORS COLLEGE**  
**Thomas E. Helm Undergraduate Research Day 2022**

**Abstract**

Poster

Major Biological Sciences

Faculty Mentor: Shawn Meagher

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**Does Fire Affect Parasitism in White-Footed Mice?**

**Sarah Kreiling**

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Parasites infect all free-living species, and often reduce the energy level and survival of their hosts, so it is important to understand the causes of parasite infections in the wild. Due to climate change, fires are becoming more common and may be an important determinant of infections. However, little research has been done on the effects of fire on parasite infections. Theoretically, fire could lead to increases or decreases in parasite infections. From the host perspective, if fire stresses the immune system, this could lead to an increase in infections. Alternatively, if fire kills weak host individuals, leaving healthy hosts to face less competition for resources, this could lead to a decrease in infection rates. From the parasite perspective, fire might decrease infections by killing the parasites themselves. In my research, I will examine the effects of forest fires on parasitism in white-footed mice (*Peromyscus leucopus*). I will collect mice from long-term burned and unburned plots at WIU Kibbe Life Science Station. Mice will be dissected and examined for parasites. My data will be combined with data previously collected by Dr. Meagher. If fire affects levels of parasitism, my results will reveal statistically significant differences in parasite loads from burned and unburned plots. My results may have important ecological implications because *P. leucopus* is one of the most abundant mammals in North America.