PROJECT SUMMARY:
Our goal is to, for the first time, evaluate the health effects of chronic exposure to radiation in gray wolves. We will use a novel device that combines GPS tracking with electronic dosimetry to get simultaneous information on an animal’s location and its radiation exposure. This innovative approach will allow, for the first time, determination of spatial and temporal variation in radiation exposure for wildlife as they move through habitats with varying levels of contamination. We will use our telemetry/dosimetry data to directly examine the relationship between health measurements and exposure. This approach will provide the most powerful analysis of impacts of chronic low-level exposure to date. Although wolves are observed in the CEZ it is unclear whether they have sustaining, healthy populations. We will use wildlife camera surveys and analyses of scat collected along roadways to examine whether radiation levels affect the presence of wolves and other carnivores found within the CEZ. With genetic analyses of the scat we can also use a forensics approach to identify individual wolves and figure out whether there are established packs of wolves and estimate overall population size in the CEZ. The results of this research will, for the first time, clearly examine the spatial and temporal variation in radiation levels that wild, free-ranging carnivores are exposed to in areas surrounding nuclear accidents, and provide critical answers about the health effects of chronic exposure to wildlife and people. All of the health effects we measure are directly applicable to human health so our work our wolves can help us understand what the impacts to human populations would be.