

Interactive effects of temperature and parasites in native bumblebees of Wyoming

In August 2013, I collected bumblebees across altitudinal gradients from grand Tetons national park. Bees were collected using visual netting, euthanized in cyanide and have been stored at -20 °C. I collected five species of bumblebees: *Bombus bifarius*, *B. centralis*, *B. flavifrons*, *B. mixtus* and *B. rufocinctus* from low and high elevation sites at Rendezvous (low = 1,960 m; N 43°35.232', W 110°49.518', high = 3,185 m; N 43°35.744', W 110°51.985') and Death canyon peaks (low = 2,020 m N 43°30.220', W 110°48.327'; high = 3,310 m; N 43°40.799', W 110°49.096'). Using statistical package "R", I have randomly sampled 10 individuals for each species and site combination. At present, I am dissecting the individuals to count the presence of conopid fly larvae in the abdomen. After separating the gut lumen from bee body, I will macerate the gut and count the number of *Crithidia spp.* and *Nosema spp.* using phase-contrast microscope. Additionally, I will also study the presence of tracheal mite in a segment of trachea in the abdomen. Once the parasite load and prevalence is determined, I will use the remaining body tissue to determine the quantities of lipids, sugars and glycogen in an individual. The data obtained from this study will then allow us to compare the interactive effects of temperature (as represented by samples across altitudinal gradient) and parasites in nutritional physiology of bees. The laboratory analyses is in process and will be complete in two to three months.