Background: In recent years, much attention has been given to the role of dietary antioxidants in preventing disease and improving overall health. Quercetin is a naturally occurring substance that is found in a variety of foods. While the health benefits of quercetin are well-established, the data regarding the impact of quercetin on exercise are inconclusive. Furthermore, there is no data regarding the efficacy of quercetin in improving aerobic exercise performance in a hypoxic environment. The purpose of this investigation is to examine the effect of quercetin on aerobic capacity and fat utilization during cycling in a hypoxic environment.

Objectives/Aims: We hypothesize that quercetin will improve VO2max and fat utilization that occurs in a hypoxic environment. In specific aims 1A and 1B, the effect of quercetin on VO2max and substrate utilization, under normoxic conditions, will be investigated. In specific aims 2A and 2B, we will investigate the effect of quercetin on VO2max substrate utilization in individuals exercising under hypoxic conditions. Participants will perform baseline (VO2max and steady-state) testing under normoxic and hypoxic conditions. Following two weeks of supplementation with either quercetin or the placebo, subjects will return to the lab to perform testing (VO2max and steady-state) under normoxic and hypoxic conditions.