**Karen Jackson**

**Year in Course:** 3 (Senior)

**Topic:** Medicine & Health

**Poster Titles:** The Effect of Rapamycin Dosing on A Murine Model of Congenital Muscular Dystrophy Over a Trial of Six Months, The Effect of Autophagy Induction on the Replication Rate of the Zika Virus

**Mentors:** Dr. Aaron Beedle, Dr. Penghua Wang

**Abstract:**

Muscular dystrophy (MD) is a group of genetic diseases that are most known for causing the progressive weakening and loss of function of the skeletal muscle. Recessive mutation myodystrophy (MYD) mice are a murine model of muscular dystrophy in which dystroglycanopathy is caused by a mutation on chromosome 8 that results in abnormal glycosylation of the protein αdystroglycan. This causes a variety of symptoms, such as progressively deteriorating muscular weakness, fatigue, a smaller adult size, reduced growth, and early fatality. Throughout the duration of the study, MYD mice and their control littermates were dosed with rapamycin, an mTOR inhibitor, with the goal of reducing their myopathy and increasing longevity and mobility. This is a continuation of a previous study in which mice were dosed five times per week; however, there was concern that the dosing schedule caused unwanted negative effects and negatively impacted animal welfare. The dosing time was reduced to three times per week for the current study. Results from the initial five times per week dosing schedule study indicate marked improvement in muscle torque and animal behavior, and preliminary results from the current study also indicate improvement in muscular dystrophy affected mice. This could potentially have applications in creating new therapeutics for people with Duchenne muscular dystrophy.