

# **BME464L Project: Respiratory Therapy Device (Retrofit)**

**Fall 2013, Palmeri**

## **Clinical Problem**

Pompe disease is a glycogen storage disease (GSD) in pediatric and adult populations that results in significant neuromuscular deficits, including cardiac and respiratory failure. While some pharmacologic treatments are promising to improve cardiac function, respiratory failure still remains a source of morbidity and mortality.

Current respiratory therapy devices are crude, lack clinician control, and provide limited-to-no feedback to the patient. Patients can potentially over-train without this feedback, which can exacerbate the muscular weakness that they are trying to compensate for with their therapy.

## **Project Objective**

Retrofit existing inspiration and exhalation respiratory devices to provide more therapeutic control, data recording, improved training safety, and patient feedback, as specified by your assigned respiratory therapist.

## **Respiratory Therapist**

Dr. Harrison Jones, Ph.D. ([harrison.jones@duke.edu](mailto:harrison.jones@duke.edu))