The Campbell Muscle Lab has spent 15 years building a cardiac biobank that now contains more than 15,000 myocardial specimens from 520 human hearts. Most of the samples were acquired from patients who received Ventricular Assist Devices or Heart Transplants. Genotyping has not been part of standard clinical care for this patient population, but cardiomyopathy panels were acquired for 33 patients (6%) who were considered at high risk of familial disease.

To further characterize our myocardial repository, DNA was extracted from 350 specimens and sent for whole exome sequencing. The average patient age is 51 years, ranging from 18 to 81 years, and over 90% reported non-Hispanic or Latino ethnic origin. There is a 7:1 male-to-female ratio, and the most common diagnoses were forms of non-ischemic heart failure (51%). Tertiary genomic analysis involves probing for 91 cardiomyopathic variants within the specimens. Collating this data will provide a genetic atlas representative of heart transplant recipients in central Kentucky. Further investigation will be required to evaluate the physiological deviation within specimens, which may elucidate the impact of variants on myocardial biophysical and biochemical properties.

**Word Count: 182**