Program Overview

- This program is designed to allow young scientists to gain exposure, direction and guidance in developing career paths.
- 10-week summer research experience geared towards students interested in pursuing a career in cancer research, biomedical sciences, bioinformatics or medicine.
- Students are assigned a mentor in a specific department and from there will receive a summer project.
- Students have the opportunity to work in a wet lab, clinical or office environment.
- Students are also given the opportunity to attend employee lecture series and program seminars.
Application Requirements

- Special NSU program - NSU students are reserved a spot in the MD Anderson summer program
- Junior or senior ranking and be a returning registered student for Fall 2020
- Overall GPA of 3.0 & GPA of 3.0 in the basic sciences
- Detailed resume, official transcript, personal statement
- 3 letters of recommendation: 2 from basic science faculty & 1 other
- The process will be application, interview & selection
- Application deadline is October 31, 2019
My Project

- I was paired with Dr. Michelle Hildebrandt in the Department of Epidemiology

- Doxorubicin is an anti-cancer anthracycline with well known cardio-toxic effects that can occur in patients days to several years after treatment exposure
  - Causes DNA damage & cell death but also has been shown to directly affect cardiac function through reactive oxygen species, calcium disruption & decreased mitochondrial activity

- Analyzing IPSC-derived cardiomyocyte mitochondrial function, contractility and viability following exposure to doxorubicin

- Analysis of two datasets from two different assays, the RTCA cardio machine and the Seahorse. Experiments were completed using 3 donor cell lines
My Project (cont.)

- Repeat of RTCA Cardio & RNAseq experiments
- Analysis of previous RNAseq data of the 3 cardiomyocyte cell lines exposed to doxorubicin

Functional annotation and gene ontology

iPSC-cardiomyocytes under the microscope
Presentation Day
Moving Forward

- Continuation of RTCA Cardio, Seahorse, and RNAseq experiments with additional donor cell lines to further understand the mechanisms by which doxorubicin affects cardiac cells at the molecular and genetic levels
Acknowledgments & special thanks

NSU Biology Student Internship Program Committee
- Dr. Raja
- Dr. Roopnarine
- Dr. Jaffe

MD Anderson Research Team