

# STRONG CHILDREN'S RESEARCH CENTER

## Summer 2017 Research Scholar

**Name:** Dylan Fortman

**School:** University of Toledo College of Medicine

**Mentor:** Dr. George Porter

---

### ABSTRACT

**Title:** Role of Modified Cyclophilin D Activity in Cardiac Mitochondrial Supercomplex Formation

**Background:** The mitochondrial permeability transition pore (PTP) is thought to be derived from ATP Synthase (complex V) of the ETC. Recent research studies suggest that CyPD regulates the assembly of complex V into supercomplexes called synthasomes, and thus potentially controls the PTP formation. In addition, preliminary data from the Porter lab indicate that ETC activity and synthasome formation, which enhances ATP production efficiency, increases during the final stage of myocyte differentiation in the neonate. We hypothesize that if CyPD is active, then it prevents synthasome formation and will increase the probability that complex V monomers would form the PTP.

**Objective:**