

CHOP Research Institute Summer Scholars Program



Rebecca Simmons, M.D.

Neonatologist

Translational Research: Research focused on bringing concepts in laboratory research directly into medical practice (may or may not involve human subjects)

Developmental Aspects of Glucose Transport, Intrauterine Growth Retardation and Diabetes

Studies suggest that intrauterine growth retardation is associated with a higher risk of obesity, insulin resistance and adult-onset diabetes. The goal of my research is to elucidate the cellular and molecular mechanisms responsible for the development of diabetes. In my lab, we are currently focusing on mitochondrial dysfunction in the b-cell. We are measuring mitochondrial function in pancreatic islets and the gene expression and activity of several enzymes that are key to energy production.

- **Potential summer research project:**
 - (1) Characterizing epigenetics in key target cells in the embryo and fetus of animal models of growth restriction or diabetes; and (2) Characterize immune cell populations in pancreas, liver, and brain of offspring of obese animals or intrauterine growth restriction.
- **Students will learn the following techniques:**
 - (1) Epigenetic profiling; (2) Flow cytometry; and (3) Immunohistochemistry.

Please click [here](#) to read more about Dr. Simmons