· **Better Baby Growth**: The placenta is crucial for a healthy pregnancy and fetal growth. With support from a Burroughs Wellcome Next Gen Pregnancy Initiative, the Baack Lab is working with our collaborator, Dr. Lisa Joss Moore at the University of Utah, to understand how the placenta regulates the transport of essential fatty acids to shape fetal growth, brain development and future health.

· **Precision Nutrition**: Sanford's Center for Pediatric Research supported the development of InvitroWOMB, a human, precision-based model designed by the Baack and de la Puente lab to non-invasively identify infants who are developmentally susceptible to obesity and metabolic disease at birth. The long-term goal is to identify high-risk babies shortly after birth when prevention is most effective, then use cell and environment modeling to guide personalized dietary interventions that could improve their lifelong health.

· **The CRIB study**: A Sanford Research Foundation grant is helping the Baack and Strahm lab pilot the Cortisol Regulation of Insulin resistance and Birth outcomes or CRIB study. The goal of the study is to understand how the maternal stress-response hormone, cortisol,

dysregulates placental steroid production to influence insulin resistance, gestational diabetes pathogenesis, fetal growth, preterm birth and other birth outcomes.

· **The MAMMA study**: The Mitochondrial Antioxidants and Mitoscoring to Modify Antenatal Outcomes or MAMMA Study is an observational study to examine the impact of reported maternal CoQ supplementation in women seeking treatment for infertility