Dr. Elizabeth Widen

PROJECT SUMMARY

Childhood obesity is a major public health problem that impacts health across the life course. Based on published studies to date, pregnancy weight gain is modifiable and is associated with offspring size and adiposity. However, there is limited evidence regarding the role of the pattern, timing and overall magnitude of pregnancy weight gain on child adiposity development and future cardiometabolic health. The Institute of Medicine revised recommendations for pregnancy weight gain (2009) emphasized the need for research focusing on the pattern and timing of gain in addition to examining effects of total gain. This application addresses this important research area. I am seeking this Pathway to Independence Award to gain additional training in advanced trajectory modeling and human phenotyping to accomplish my career goals of becoming an independent investigator with expertise to rigorously examine the role of maternal nutrition during pregnancy and lactation on both maternal and child health. The training portion of this award includes formal courses, directed readings, apprenticeships, participation in working groups, attendance of seminars and career building activities to gain skills in: 1) longitudinal methods for trajectory analysis; 2) advanced methods for body composition assessment and analysis; 3) dissemination of research findings and grant writing. The research component of this project applies innovative trajectory modeling approaches to examine maternal weight trajectories in pregnancy. I will leverage existing data from the Columbia Children's Center for Environmental Health Mothers and Newborns Study and the NICHD Fetal Growth Study to accomplish the following specific aims: 1) Identify maternal weight trajectories reflecting timing and overall pattern of gestational weight gain using nonparametric trajectory methods and to examine determinants of these trajectories. 2) Examine how maternal weight trajectories relate to child growth, body composition and cardiometabolic health. 3) Conduct a pilot study to evaluate whether maternal fat mass changes are associated with specific maternal weight trajectories during pregnancy and neonatal adiposity. These training and research activities will lead to publications, conference presentations and will prepare me to successfully compete for R01 funding during the R00 phase.