



Childhood Obesity Research Core Mini-Grants 2019 Request for Applications

DUE DATE: 5pm on Tuesday, September 3, 2019

Description

Under the direction of Dr. Joyce Lee and Dr. Karen Peterson, the Momentum Center is applying for funding to establish a core within the NIH-funded Michigan Nutrition Obesity Research Center (MNORC). The proposed Childhood Obesity Research Core (CORC) will provide services in three key areas to develop capacity to support research projects at the University of Michigan. Areas of future services include the following:

DIRECT SERVICES AND CONSULTATION TO SUPPORT PROSPECTIVE PEDIATRIC RESEARCH

The CORC takes advantage of the health information technology infrastructure provided by the Michigan Medicine electronic health record (EHR), providing investigators with access to data, insights, and health IT tools to study and interact with a clinical population of over 30,000+ children seen at nine community-based pediatric practices at Michigan Medicine and their mothers (11,000+) for whom medical record data is available. CORC staff are available to deliver individualized support to investigators: providing data and insights through data queries and data visualizations to support cohort identification and sampling, offering assistance with IRB, patient recruitment, new biospecimen collection, facilitate acquisition of neonatal blood spots, protocol support, and supporting the design and development of customized health IT tools to allow investigators to utilize the clinical delivery system as a broad and powerful platform for translational research.

ACCESS TO A CENTRALIZED PEDIATRIC DATA REPOSITORY

With the Pediatrics Data Repository, the CORC provides deidentified secondary data from the EHR, not only for the current primary care cohort seen by Michigan Medicine General Pediatrics, but also historical data of 30,000+ pediatric patients seen since 2012, including longitudinal information about clinical status, health outcomes, and patient-reported outcomes. These data can be linked to additional social determinants and geographic data from the Office of Research and additional datasets from national networks of health systems. CORC staff are available for consultation about study design and data analysis approaches using data from the repository and can offer insights into the advantages and limitations of EHR data. See the Data Dictionary for details on the data that is currently available.

ACCESS TO CLINICAL DATA AND BIOSPECIMENS FROM PEDIATRIC COHORTS

The CORC will provide investigators with consultative expertise, research data, and biospecimens from existing deeply phenotyped pediatric research cohorts across the weight spectrum to support investigators with novel research questions that can be answered by these datasets. Data and biospecimens are available from the following cohorts:

- **Healthy Families.** Healthy Families is an interdisciplinary project that explored multiple aspects of a child's biology, diet, physical activity, environment and family relationships in order to develop a phenotype of children according to the strength of their observable satiety cues. The study enrolled 40 families with a child 12.0-24.0 months old ("toddler age"), 40 families with a child 3.0 - 5.99 years old ("preschool age"), and 52 families with a child 10.0 - 12.99 years old ("school age") and included: structured interviews, Language ENvironment Analysis

System (LENA) audio recording, use of actigraphy equipment to collect data regarding daily physical activity of the child and parent, collection of saliva for epigenetic and fatty acid analyses, and epigenetic analysis of neonatal blood spots obtained from the Michigan Neonatal Biobank in order to assess the impact of environment, nutrition, and behaviors on epigenetic expression over time.

- **Conventional and Metabolomic Predictors of Pediatric Prediabetes & Insulin Resistance.** This project examined the longitudinal test performance of conventional and novel metabolomic biomarkers for early identification of prediabetes and diabetes in an overweight/obese pediatric cohort. The study enrolled ~350 children ages 8-17 years, ≥ 85th BMI percentile; exclusion criteria included a diagnosis of diabetes mellitus, medications known to affect glucose metabolism, or pregnancy. Study participants had a baseline evaluation, consisting of two study visits (one with a fasting 2-hour oral glucose tolerance test (OGTT) and one with non-fasting glucose challenge test (GCT)) within a 1-5 week period. After an average follow-up period of approximately 2.5 years, participants returned for two more study visits consisting of two fasting 2-hour OGTTs within a 1-5 week period. Additionally, ~100 children ages 8-17 years, <85th BMI percentile were enrolled as normal weight healthy controls which consisted of two 2-hour fasting OGTTs within a 1-5 week period. Biospecimens (plasma, serum, and whole blood) were collected at multiple timepoints during the OGTTs and GCT along with anthropometrics, Tanner staging, 3-day food diary, and repeated parent and child survey measures including diet/eating attitudes/food addiction scale, sleep, physical activity, technology use, and family medical history.
- **Early Life Exposures in Mexico to ENvironmental Toxicants (ELEMENT).** ELEMENT comprises three epidemiologic birth cohorts of ~800 women in Mexico City who were sequentially-enrolled over a 10-year period from 1994-2005. The original goal was to investigate the influence of perinatal lead exposure on fetal and infant development. Through subsequent research, repeat exposures to metal mixtures, phenols and phthalates across sensitive developmental periods have been characterized as well as cognition, behavior, sexual maturation and obesity-related outcomes, including metabolic syndrome risk. In 2011-2012, 250 children aged 8-14 years were re-recruited from Cohorts 2 and 3 to study the effects of prenatal and adolescent exposure to lead, bisphenol A (BPA) and phthalates on obesity and maturation. From 2013-2018, 550 children, now aged 12-22 years, from all three cohorts were followed to assess the effects of perinatal and peripubertal toxicant mixtures on maturational tempo, physical growth, and metabolic homeostasis.

Key Dates

Applications Due	Anticipated Award Notification	Funding Cycle Begins	Funding Cycle Ends
September 3, 2019 by 5pm	Mid-September 2019	October 1 st , 2019	September 30 th , 2020

Funding

Seed/pilot funding of up to \$3500 is available for University of Michigan (U-M) faculty engaged in childhood nutrition and overweight/obesity research who are seeking preliminary data/formative work to support future NIH applications. Up to \$3500 is available per award; Up to eight (8) awards will be given.

Eligibility

All active U-M faculty are eligible to apply. It is strongly encouraged that at least two investigators are listed on the application with priority granted to cross-disciplinary teams including basic/translational/health services researchers and clinicians. The Momentum Center team can facilitate partnerships as requested.

Trainees are not permitted to apply, though funding may be used to support their contribution to the faculty member's project/pilot work.

Submission

Applications must be submitted via the [online application form](#) by **5pm on Tuesday, September 3rd, 2019**.

Notification

It is anticipated that awardees will be notified in mid-September, 2019.

Application Requirements

Project must be led by a U-M faculty member and should generate pilot work or preliminary data for a future NIH grant. Trainees are not permitted to apply, though funding may be used to support their contribution to the faculty member's project/pilot work.

It is strongly encouraged that at least two investigators are listed on the application with priority granted to cross-disciplinary teams including basic/translational/health services researchers and clinicians. The Momentum Center team can facilitate partnerships as requested.

Project must use at least one of the services of the proposed CORC. Examples are provided below, however projects do not have to be limited to these scenarios:

- *Dr. S is a basic science researcher who wants to collect biospecimens from children with a particular clinical and BMI trajectory history. She is seeking support to help with study design and patient recruitment.*
- *Dr. T is a clinical investigator who wants to recruit for a clinical study. He is interested in identifying the number of active patients seen at General Pediatrics primary care clinics with particular demographics, maternal history, and BMI trajectory history.*
- *Prof. U is a researcher who wants to conduct a formative pilot study of an intervention within the pediatric primary care setting. She wants a connection to a pediatrician interested in the topic so she can pilot materials with the pediatrician and patients in the clinical delivery setting.*
- *Prof. V is a researcher who is interested in administering surveys to pediatric primary care patients. She needs advice on how to design and deploy a caregiver research survey that can be filled out at the annual visit.*
- *Prof. W is interested in looking at the relationship between weight status and PHQ-9 scores using secondary data available through the Pediatrics Data Repository.*
- *Prof. X and Dr. Y would like to conduct formative surveys/interviews with pediatricians and staff in primary care to assess clinician/staff willingness to deliver an intervention for overweight adolescents.*
- *Prof. Z is planning an intervention and would like to target pediatric primary care patients and would like to work with the CORC to customize MiChart tools for research recruitment.*

Questions

Questions should be directed to Ashley Garrity, MPH, Momentum Center Manager, email: ashleyyna@med.umich.edu.