Primary Applicant: Maryse Bouchard
Co-Investigators: Mark Myerson, Shuyuan Li

Project Title: Improving access to pediatric clubfoot treatment in remote, resource-poor areas using smart glasses technology for telementoring of surgeons on casting techniques and surgical procedures

Project Description: This pilot study evaluates the use of smart glasses technology for telementoring of surgeons in remote, resource-poor areas in the treatment of pediatric clubfoot deformities. This is a collaboration between The Hospital for Sick Children, and two non-profit organizations, Steps2Walk and Ohana One. As the opportunities for surgical training in resource-poor areas are limited, telementoring is an ideal solution as it can build sustainably from whatever state of clubfoot care programming a country or region has attained. During this 6-month training curriculum, knowledge and surgical skill acquisition of mentee surgeons will be assessed by the mentor using Objective Structured Assessment of Technical Skill (OSATS) and Global Rating Score (GRS) evaluations after each procedure. Impacts of the training on the mentee surgeon’s practice and patient population will be measured with objective surveys regarding case volume, case complexity, and confidence before and after the program. Mentor and mentee experiences using the smart glasses, including technical challenges, will be recorded after each live procedure.

Primary Applicant: Isabel Potani
Co-Investigators: Robert Bandsma, Allison Daniel, Chisomo Eneya, Sylvester Kathumba, Wieger Voskuil

Project Title: Optimization of ready-to-use therapeutic food: Increasing protein quality and quantity to improve growth in children with severe acute malnutrition

Project Description: Ready-to-use therapeutic food (RUTF) is currently the standard nutritional treatment for children with severe malnutrition. Protein requirements are high in these children, but RUTF does not meet these needs based on protein quality scores. We therefore partnered with Nutriset, the largest global manufacturer of RUTF, to create a new version of RUTF with higher protein quality and quantity. We hypothesize that this optimized RUTF with will lead to greater weight gain in severely malnourished children, which we will assess within a proof-of-concept randomized controlled trial in Blantyre, Malawi.
Project Title: Investigating pathways between maternal nutritional status, breastmilk composition, and infant linear growth in rural Pakistan

Project Description: Based on an established hypothesized pathway model, reflecting pathways between maternal nutritional status, breastmilk composition, infant linear growth, and from a complete breast expression collected at 3-months postpartum, this study aims to examine these simultaneous pathways using structural equation modelling. Participants will include a subset of mother-infant pairs enrolled in an ongoing trial in rural Pakistan (MaPPS Trial; ClinicalTrials.gov identifier: NCT03287882). Additionally, this study will aim to determine whether breastmilk micronutrient composition differs between those participants receiving daily multiple micronutrient supplements compared to those receiving the standard of care (no supplementation).

Project Title: Using Machine Learning to improve the efficiency and sensitivity of literature reviews

Project Description: Abstract screening phases during literature reviews can be long and error-laden processes, requiring multiple reviewers to ensure the inclusion criteria are met. Recent advances in Natural Language Processing (NLP) can be used to automatically rank abstracts according to their relevance for subsequent human screening. In addition to speeding up the review process, such models can identify potential human errors in screening, improving the overall quality and comprehensiveness of literature reviews. We leverage a transformer-based language model ROBERTA to accurately embed and classify abstracts for inclusion in literature reviews. The goal of this project is to develop an open source, highly efficient and high-performing algorithm with a user-friendly interface, which would allow researchers to conduct literature reviews or update their past literature reviews efficiently.
2019
Primary Applicant: Nancy Dale
Project Title: Improving the Outcomes of Community-based Management of Acute Malnutrition

Primary Applicant: Sumit Gupta
Project Title: Economics of Childhood Cancer in Africa

2018
Primary Applicant: Avi Denburg
Project Title: Childhood Cancer Drug Access in Low- and Middle-Income Countries: A Pilot Study

Primary Applicant: Laura Vresk
Project Title: Paediatric Nutrition Support in a Low-Resource Hospital Setting

2017
Primary Applicant: Céline Bourdon
Project Title: Malnutrition-induced Gut Dysfunction Treated by Milk-derived Exosomes: Proof of Concept

Primary Applicant: Heather Christine Millar
Project Title: Starting at the Roots: Using Human-centred Design to Create an Adolescent Pregnancy Program in Eldore, Kenya

Primary Applicant: Nandita Perumal
Project Title: The Effect of Nutrition-specific National Policies on Micronutrient Malnutrition among Young Children in Low- and Middle-income Countries

2016
Primary Applicant: Michael Leung
Project Title: Maternal-child Exposures to Persistent Organic Pollutants in Dhaka, Bangladesh

2015
Primary Applicant: John Parkinson
Project Title: Investigating the Role of Eukaryotic Microbiota in Malnutrition

Primary Applicant: Lillian Sung
Project Title: Quality of Life, Fatigue and Family Functioning for Children with Relapsed Acute Leukemia in El Salvador