• Develop noninvasive markers of disease severity in pediatric patients with functional nausea.

Functional nausea (FN) is important to study in adolescents because it is ubiquitous, chronic, tracks into adulthood, and adversely affects the quality of life of patients, yet understanding the pathophysiology might allow interventions at the time of therapeutic plasticity. Currently, the ability to study FN is limited due to the lack of an objective clinical test to characterize or measure nausea or to predict its response to treatment or exacerbating factors. Our study identifies complex spatial dysrhythrias in pediatric FN patients using noninvasive bioelectromagnetic techniques integrated with mathematical modeling. Successful completion of the project could contribute to understanding the altered physiology of FN, to stratification of FN patients according to physiological and/or psychological phenotypes, to improve diagnosis and provide objective measures of nausea and to inform and guide treatment options.