



**Application Number / Title:** 17346 - Study of aging, genes, and environment

**Applicant PI:** Assistant Professor Brandon Pierce

**Applicant Institution:** University of Chicago, Public Health Sciences, 5841 S. Maryland Avenue, MC2000, Chicago IL 60637, United States

**Funding body:** Internally funded from existing funds at University of Chicago

**Keywords provided by the Applicant PI to describe the research project:** Aging, cognitive function, biomarkers, GxE

**Application Lay Summary:**

**1a:** Our goal is to create biological, cognitive, and physical measures of aging using phenotypic data from UK Biobank and to assess how these phenotypes are influenced by genes, environmental factors, and gene-environment interactions. We will focus primarily on common types of cancer, such as breast, prostate, lung, colorectal, ovarian, and skin cancer.

**1b:** By understanding factors that influencing rate of aging, we will be better equipped to develop approaches for prevention and treatment of age-related health conditions.

**1c:** Will we use diverse types of data sources that biological aspects of aging (biomarkers, cognitive function, and physical function) to create composite measures intended to represent “biological age”. We will then use the available genetic data and environmental measures (e.g., smoking, dietary factors, physical activity, and anthropometric data) to identify gene-environment interactions.

**1d:** We plan to use the full cohort.