A major goal in evolutionary biology is to understand variation in fitness-related traits. Achieving this goal remains challenging because fitness-related traits are not only determined by an individual’s current environment and genotype, which can be measured concurrently with the trait itself, but also by 1) experiences that accumulate across the entire life course and 2) interactions between genotype and these environmental exposures. To address these key sources of variance, I have collected individual-based environmental, genomic, and health data from the Turkana people of Kenya—a traditionally subsistence-level group that is rapidly transitioning toward more urban lifestyles. Using this dataset, I will explore the health consequences of city living in both early life and adulthood, as well the degree to which adaptive genetic variation and lifestyle shifts interact to affect health (as suggested by the “evolutionary mismatch” hypothesis). Importantly, I will also explore these same ideas in a lab-based system which provides greater power to address causality.*

* Provided by speaker