Research:

Metals such as arsenic (As) and lead (Pb) are environmental pollutants, often found in common sites due to their ubiquitous nature and production of virgin Pb. Several epidemiology studies suggest that low-level chronic exposure during development leads to impaired function and development of fine structures in the nervous and vascular systems. In this study, we are first defining single metal developmental toxicity and then investigating the toxicity mixture interaction between As and Pb by assessing lethality, morphology, and behavior using the zebrafish model system. Preliminary mixture data, based on lethality data collected on the single components, indicates an additive effect. This study provides evidence for current mixture toxicology models that will then be applied to investigate the developmental origins of cerebral amyloid angiopathy (CAA), a disorder characterized by amyloid deposition in the walls of the cerebral vasculature.

Freeman Lab Trainee