



Interdisciplinary Consortium
for Applied Research in the
Environment

National Science Foundation
Research Training Grant

*Broadening Participation Across the
Environmental Sciences in & around
Baltimore Harbor*



Project Title: What do property rights and land tenure security tell us about forest health and connectivity in Baltimore?

UMBC mentor name & department: Dr. Margaret Holland, Geography & Environmental Systems, University of Maryland Baltimore County

Partner mentor name & institution: Dr. Miranda Mockrin, USDA Forest Service, Baltimore Field Station (UMBC Research Park)

Brief project description:

Protected areas, or parks, form the backbone of many forest conservation efforts, yet substantial areas of forest are found outside parks, across a variety of private and community land ownerships. In the city of Baltimore, 20% of tree canopy is in forest patches outside parks, where ownership and management can be complex, overlapping, or unclear as to who is responsible for safeguarding forests. While much of Baltimore County remains rural, here as well, forests are highly fragmented into approximately 9,000 patches, with an estimated 50,000 or more owners. These forest patches provide vital ecological services, including maintaining the health of aquatic systems and the Baltimore Harbor.

Scientists at the US Forest Service and UMBC have developed a unique database of legal ownership and responsibility for managing forest patches in Baltimore City and County. We now seek a student to help us develop this into a mixed methods analysis, through ground-truthing the geospatial analysis of property ownership and forest patch persistence, and through interviews with forest patch owners and managers, examining management challenges and perspectives across the urban-rural gradient. Additional measures and knowledge of forest condition and land use history will help extend our research to develop a comprehensive assessment of forest conditions.

This research adds a new lens to our understanding of Baltimore's forests, and under what settings publicly- and privately-owned forests thrive, persist, or vanish. Such knowledge is important for the multiple partner organizations who work with forests in Baltimore to enhance and maintain ecosystem and human health. Specifically, a better knowledge of forest owners' perspectives across urban and rural settings will enhance outreach and stewardship efforts, resulting in a healthier Baltimore Harbor and Chesapeake Bay.