



M.S. or Ph.D. Assistantship in Human Dimensions of Citizen Science Fall 2024 in the Cooper Public Science Lab

The College of Natural Resources (CNR) at North Carolina State University invites applications for an M.S. or Ph.D.-level assistantship beginning in Fall 2024 (start dates negotiable). The successful applicant will work under the supervision of [Dr. Caren Cooper](#) (Dept. of Forestry and Environmental Resources) and have the option to pursue a degree in [Parks, Recreation & Tourism Management](#), or [Fisheries, Wildlife & Conservation Biology](#), or [Geospatial Analytics](#). The student can also affiliate with the [Global One Health Academy](#). The student will join an interdisciplinary team of ecologists, engineers, and social scientists, supported by an [NSF-Understanding the Rules of Life to Address Societal Challenges \(URoL:ASC\) grant](#), investigating a system of sensors on freshwater mussels for real-time detection of water contamination. Recent developments in low power and distributed sensing, along with machine learning, now enable a new type of water monitoring. We are developing a Bivalve-based Living Sensor Systems (BLiSS) in which the sensor readings on freshwater mussels instantaneously reveal the presence of water contaminants at inlets & outlets of public water infrastructures, where they pose a risk to human and animal health.

The graduate student will develop their expertise in the participatory sciences (e.g., citizen science) and bring that into collaborative interdisciplinary research with the project team who hold expertise in freshwater mussel biology, aquatic ecosystem epidemiology, bionic animal-machine interfaces, wireless embedded systems, sensors, novel materials, and machine learning. The graduate student will create and manage big data for a citizen science project (likely on the [Zooniverse platform](#)) in which participants annotate videos of freshwater mussel behavior and sensor data. While project engineers will use the annotated data to train machine-learning algorithms, this student can choose to explore a range of research questions focused on the participant experience. Potential research topics include participant motivations, effectiveness of curricular support of learning, behavioral connections between field-based volunteer water monitoring and the online effort, design of equitable partnerships that support diverse engagement, public AI literacy, and other emergent issues.

Key Responsibilities & Opportunities (with greater independence for PhD than MS):

- Work with faculty advisor to advance citizen science theory and practice through an innovative research project.
- Coordinate with project team members to crowdsource useful annotations.
- Author and co-author peer-reviewed journal articles, academic presentations, non-technical reports and outreach materials, and other project deliverables.
- Engage participants through the Zooniverse Talk discussion forum
- Train and supervise undergraduate research assistants.
- Contribute to the activities of the cluster on [Leadership in Public Science](#), which offers unique intellectual focus and professional development in the realm of the participatory sciences and science communication.

Required Qualifications:

- BS (for MS level) or MS degree (for PhD) in human dimensions of natural resources, park/recreation management, social sciences, information sciences, biological sciences, or related field
- Demonstrated research experience (data collection, analysis, and writing)
- Excellent verbal and written communication skills
- Strong commitment to public engagement in science
- Strong commitment to interdisciplinary research
- Meet admissions requirements of the NC State Graduate School

Desired Qualifications:

- Some background and/or coursework in public engagement, water quality, global one health, or related topics
- Experience with quantitative research and analysis skills, including data management, and survey development
- Experience with qualitative research, including interviews and coding data
- Experience with web analytics
- Experience working in citizen science contexts as a researcher and/or practitioner

Assistantship Package: The assistantship provides a stipend of approximately \$30,000/year plus tuition and health insurance.

Starting Date: The negotiable starting date for the assistantships is August 15, 2024.

How to Apply: Please begin the application process by sending an email to Dr. Caren Cooper (cbcoope3@ncsu.edu), attaching the following items in one PDF document:

- 1) Letter of Intent (personal statement describing your relevant professional and/or lived experiences, and the scope of your research interests and career aspirations. Also specify preferred assistantship, that is, MS or PhD)
- 2) Resume or CV
- 3) Contact Information for 3 Academic References

The position will remain open until filled, with all applications submitted by Friday January 12, 2024 receiving full consideration. If selected for the position, applicants will be asked to [submit an online application](#) to the NC State Graduate School.