

2022 Wisconsin Sea Grant Summer Internship Program Internship Descriptions

1. Exploring Connections Between Mental Health and Climate Change in Wisconsin
2. Great Lakes Geospatial Data Visualization
3. Beach Ambassador Program for Great Lakes Water Safety
4. Eat Wisconsin Fish
5. Exploring Indigenous Knowledge and the Green Bay Watershed
6. Assessing the Invasive Species Risk of the Great Lakes Market for Used Watercraft
7. Developing a Mutual Shared History and Sense of Place in Great Lakes Communities
8. Harvesting Manoomin as a Climate Adaptation and Resilience Strategy
9. Expanding Voices Heard in the Wisconsin Water Library

Covid-19 Location/Work Setting Statement for All Internships:

At the time of this notice of opportunity, public health protocols to curb the spread of Covid-19 are in place. While it is unknown the extent to which the virus will be widely circulating in summer 2022, all internships will be structured to accommodate either remotely conducted activities or safe, in-person activities. The internship program will be subject to the [Covid-19 Workplace Safety Policy at the University of Wisconsin-Madison](#). Resilience and flexibility given these uncertainties are necessary and appreciated.

Exploring Connections Between Mental Health and Climate Change in Wisconsin

Mental health is a key component of overall health and well-being and is being impacted by climate change, especially through extreme weather events. According to the American Psychiatric Association “[c]limate change and related disasters cause anxiety-related responses as well as chronic and severe mental health disorders” and affect first responders and vulnerable populations inequitably. The goal of this project is to build understanding of how climate change is impacting mental health in Wisconsin, especially in the state’s northern coastal communities, and ways that community outreach can be responsive to mental health.

Intern Responsibilities:

The intern will conduct a literature review of mental health and climate change research to understand the state of the science and current best practices for delivering climate change information in a trauma-informed way. Other tasks might include community surveys, assistance with grant proposal development and integrative mapping. There is flexibility in the workplan that can be determined by the successful candidate’s skill set and interests around this topic.

Work Setting:

Virtual

Qualifications and Interests:

- Interest in the subject matter
- Some research experience
- Good communication skills

Great Lakes Geospatial Data Visualization

U.S. Environmental Protection Agency researchers are working with state and federal partners to support Great Lakes water quality monitoring, invasive species early detection and Great Lakes restoration. Researchers are also examining how Great Lakes restoration is improving human well-being in Great Lakes communities. This work has substantial data challenges, including integrating data from a variety of sensors and sources, processing and displaying high-resolution data (e.g., autonomous underwater glider data, watershed hydrology and remotely sensed data) and integrating data from the natural and social sciences (e.g., citizen science, ecosystem services). Goals of the research include improved data processing, developing data analytics and novel visualization methods.

Intern Responsibilities:

This intern will participate in research activities associated with a variety of Great Lakes ecosystems. Activities will emphasize data analysis of ecological, physical and social geospatial datasets using geographic information systems, data analytics and data visualization technologies. The intern will have the opportunity to participate in multi-agency meetings and learn about ongoing resource management issues across the Great Lakes while working with a wide variety of datasets.

Location:

Virtual, possibly with an a few in-person visits, workshops, etc. in Superior, Wisconsin. (See Covid-19 statement on page 1.)

Work Setting:

Office work (100%)

Qualifications and Interests:

- Comfortable working independently and as part of a team
- Some course experience in geographic information systems preferred

Beach Ambassador Program for Great Lakes Water Safety

Issues of water safety on Milwaukee's beaches have been exacerbated due to Covid-19 and high water levels on Lake Michigan. Covid-19 has caused more people to be outside and use the beaches, but many people are not aware of or are not following necessary precautions to ensure their safety. These factors have led to drownings on Milwaukee beaches that perhaps could have been prevented with proper awareness through education, outreach and effective communication of water-safety resources. People of color, and particularly African American and Black communities, are at increased risk of drowning due to often having a no or low level of swimming ability (USA Swimming Foundation). The 2022 Beach Ambassador project is organized by Sea Grant and several Milwaukee-based partners. The Beach Ambassador project aims to create a new platform for effectively communicating Lake Michigan beach conditions and increasing awareness and knowledge among the general public to prevent further unnecessary drownings.

Internship Responsibilities:

- Work with a small cohort of interns and project partners to educate the general public about current or potential beach hazards, including rip currents and beach closures due to water quality.
- Educate public at Milwaukee beaches about water safety through conversation, presentation of outreach materials, social media and local news interviews
- With help of a supervisor, learn and implement social science methods (ex: field notes, short surveys) into data collection and teach methods to other beach ambassadors/interns
- Regularly work in coordination with project team and Milwaukee County lifeguards and staff to be knowledgeable of and up to date on daily weather and water quality conditions and be able to communicate current or potential beach hazards clearly and effectively with beachgoers
- Participate in a two-day training program on beach safety and how to effectively convey safety messaging as a Beach Ambassador.
- Conduct outreach at local events and with diverse school groups

Location:

Milwaukee, Wisconsin (See Covid-19 statement on page 1.)

Work Setting:

Office work (50%), Field work (50%)

Qualifications and Interests:

- Must be able to work flexible hours, including some early evenings and weekends
- Ability and desire to work outside during a variety of weather conditions
- Safe interaction with the public if Covid-19 restrictions are still in place, including the use of face masks at all times while working.
- Comfort in approaching and enthusiastically communicating with members of the public
- An interest in water safety and social justice
- Leadership skills and knowledge of Google Suite (ex: Docs, Meet, Sheets, Drive)

Eat Wisconsin Fish

Eat Wisconsin Fish (eatwisconsinfish.org/) is an initiative connecting consumers, fish farmers and commercial fishers through information about local fish available for purchase in Wisconsin. Eat Wisconsin Fish supports the goal of creating a safe and sustainable seafood supply to meet consumer demand, as well as fostering informed consumers who understand the health benefits of seafood consumption and how to evaluate the safety and sustainability of the seafood they buy.

Intern Responsibilities:

Eat Wisconsin Fish seeks an undergraduate student interested in [information management](#). This intern will create a better system to manage information about purchasing local fish from multiple data sources that contain overlapping information. The project will result in a database that feeds directories and the map on the Eat Wisconsin Fish website. The information management system will make data entry easier and facilitate the data sharing with the regional Great Lakes Fresh Fish Finder website (freshfishfinder.org/) and the Eat Midwest Fish website (eatmidwestfish.org/). The intern could also help develop story maps that support the Eat Wisconsin Fish project. Possibilities include: 1) Where do yellow perch come from?; 2) The story of American roe; and 3) How far away is your nearest fish farm? The intern could also be invited to represent the Eat Wisconsin Fish initiative at community or online events.

Location:

Virtual

Work Setting:

Office work (80%), Off-site (20%)

Qualifications and Interests:

- Interests in local food systems, information management and science communication
- Familiarity with Esri ArcGIS Online and Excel
- Comfortable working independently and as part of a team

Exploring Indigenous Knowledge and the Green Bay Watershed

First Nations continue to hold a strong connection to the bay of Green Bay and its adjoining tributaries. Incorporating Indigenous knowledge that was/is common into preserving and restoring the watershed is significant to honoring sovereignty and treaty rights. This 10-week summer internship will provide leadership growth, employment experience and cultural exploration through acknowledgement and support of First Nations connections to the Green Bay watershed.

Intern Responsibilities:

The intern will engage with UW-Green Bay's First Nations Studies Department, Sea Grant and Cofrin Center for Biodiversity staff to complete a First Nations outreach and/or education project connecting Indigenous knowledge with restoration efforts at the Wequiock Creek Natural Area. Activities may include, but are not limited to, archival research, archeological collection, documenting and organizing oral tradition and the creation of outreach and education materials. Professional development opportunities will include attending workshops, participating in field work and engagement with First Nations communities in the surrounding area of Green Bay.

Location:

Green Bay, Wisconsin (See Covid-19 statement on page 1.)

Work Setting:

Office work (50%), Off-site (50%)

Qualifications and Interests:

- Interest in Indigenous knowledge systems and ecological restoration
- Creativity
- Ability to work independently and collaboratively
- Good written and oral communication skills
- Willingness to work outdoors in varied weather conditions
- Ability to drive to off-site locations (valid driver's license, good driving record, etc.)

Assessing the Invasive Species Risk of the Great Lakes Market for Used Watercraft

Invasive species are nonnative plants, animals and pathogens that cause negative impacts to the environment, the economy and human health. Zebra and quagga mussels, an aquatic invasive species of national concern, disrupt food webs that can reduce the number of desirable fish, while their tendency to attach to surfaces can damage structures and incur millions of dollars of control costs. These mussels are present in a relatively high number of waters in the Great Lakes region when compared to the rest of the U.S.

A well-known invasion pathway of these invasive mussels is recreational watercraft. The mussels can be attached to the watercraft or attached to plants that are accidentally transported on the trailer or other parts of the boat. Boater education efforts have been successful in helping boat owners take action to prevent the spread of invasive species by cleaning their boats between uses. However, a gap exists for the sale of used watercraft.

States in the western U.S., where the populations of these mussels are lower, are seeing watercraft that were purchased in the Great Lakes region through online marketplaces being transported out West, which represents a significant risk to uninvaded waterbodies in those states. Western states need help from Great Lakes states to address this pathway and understanding the market for used watercraft in the Great Lakes region – how many boats are being sold, which types of boats, who is selling them – is the first step to reduce invasion risk through this pathway.

Intern Responsibilities:

We hope that an undergraduate research scholar can take the first steps of this project by working with two regional invasive species working groups to gather existing data on this pathway and then design a program to monitor online used watercraft marketplaces for high-risk vessels. The data collected will be used to develop a pilot outreach program and there will be opportunities to present the results of the research to the partner working groups.

Location:

Virtual

Work Setting:

Office work (100%)

Qualifications and Interests:

- Interest in environmental science and natural resources management
- Familiarity with online marketplaces (Craigslist, Facebook marketplace)
- Interest in community engagement and applied science

Developing a Mutual Shared History and Sense of Place in Great Lakes Communities

U.S. Environmental Protection Agency (EPA) researchers are working with state and federal partners to support Great Lakes remediation and restoration efforts in communities with a history of environmental degradation. Researchers are also examining how Great Lakes restoration is improving human and community well-being in the Great Lakes and ways that the EPA can support community revitalization efforts. To help these communities develop a vision of what their revitalized community could look like, it would help to develop a mutual shared history of how environmental degradation occurred, and how efforts to remediate and restore these areas were successful. This information can then lead to a greater community “sense of place” and a greater appreciation of the benefits of a healthy environment in the Great Lakes. This project will employ crowdsourced local knowledge using online tools and platforms to collect and develop this information.

Intern Responsibilities:

This intern will help develop existing and new tools and platforms for crowdsourced local knowledge and sense of place. We will explore how crowdsourcing with public participation geographic information systems and social media analysis can reveal local knowledge and history as well as local community values, place-based memories and experiences.

Location:

Virtual, possibly with an a few in-person visits, workshops, etc., in Superior, Wisconsin. (See Covid-19 statement on page 1.)

Work Setting:

Office work, possibly with a few site visits

Qualifications and Interests:

- Comfortable working independently and as part of a team
- Some course experience in geographic information systems preferred
- Interest in citizen/community science
- Interest in urban planning, community well-being

Harvesting Manoomin as a Climate Adaptation and Resilience Strategy

Manoomin (Ojibwe) or Psij (Dakota) (wild rice, *Zizania palustris*) is an ecological and cultural keystone species across the western Great Lakes, a shallow water plant that is critically important for the health and well-being of human and wildlife communities. However, Manoomin has experienced extensive loss in range and abundance across the western Great Lakes as a result of a combination of factors, including impacts from climate change, land-use change, altered hydrology, water quality and other changes including altered ecological/biological community interactions and a lack of recruitment and retention of harvesters. In this National Oceanic and Atmospheric Administration-funded project, our collaborative team integrates Western science-based natural resource adaptation approaches with traditional ecological knowledge and management to address adaptation needs of Manoomin. In this research we ask, "What can Manoomin teach us about restoring ecological and social relationships and adapting to climate change in the western Great Lakes and other coastal communities?" We propose that harvesting Manoomin is a critical climate adaptation and resilience strategy in the Lake Superior region, in part because harvesting requires respectful physical and metaphysical relationships among human and non-human communities. Team members on this project will work to learn about social-ecological system health and enhance resilience by centering on Manoomin, raise public awareness of Manoomin, and identify drivers that foster awareness, respect, responsibility and adaptive behaviors to serve as a model for Great Lakes communities.

Intern Responsibilities:

- Serve as part of a small intern cohort working on Manoomin-related projects based in Minnesota and Wisconsin
- Regularly participate in virtual and in-person meetings with supervisors and project partners
- Possible travel to Minnesota and/or Wisconsin to participate in field-based programs (ex: interviews, active listening and observing, wild rice monitoring), local events (ex: pow-wows, ceremonies) with native nations to learn about research methods, oral history, stories, etc. or present wild rice educational display at summer festivals or events
- Read literature and treaties to better understand issues related to Manoomin and local Native American history
- Help plan Manoomin gathering events and workshops by coordinating with project partners

Location:

Virtual, with possible travel to sites in Minnesota and/or Wisconsin. (See Covid-19 statement on page 1.)

Work Setting:

Office work (50%), Field work (50%)

Qualifications and Interests:

- Ability to work independently with limited supervision
- Safe interaction with the public and project partners if Covid-19 restrictions are still in place, including the use of face masks at all times while working with others
- An interest in ecology and Native American history, policy and events
- An interest in learning various social science and ecological field methods
- Leadership skills and knowledge of Google Suite (ex: Docs, Meet, Sheets, Drive)

Expanding Voices Heard in the Wisconsin Water Library

The mission of the [Wisconsin Water Library](#) is to collect, preserve and provide science-based resources and outreach in support of the Water Resources and Sea Grant institutes. One of the library's goals is the preservation of its collections for future as well as historical value, which includes curating vulnerable digital and print assets. This ensures that the breadth of knowledge and scholarship about the Great Lakes and Wisconsin's waters are preserved in their entirety. This library collection also informs the education and outreach programming provided by the library in a variety of informal learning environments, such as public libraries and community centers. This 10-week internship will provide an opportunity to explore academic librarianship and science outreach and will focus on bringing diverse voices into the library's collection and programming.

Intern Responsibilities:

Over the course of 10 weeks, the intern will explore the collections and programming of the library with a critical eye towards ensuring multicultural perspectives and approaches. One project will be the expansion of the Maadagindan! Start Reading! Book Club, to be launched in the spring of 2022.

Maadagindan! is a book club for librarians and educators focused on children's books about Ojibwe culture and the Great Lakes. (<https://go.wisc.edu/e964d6>). The book club will continue into the fall of 2022 and the intern will plan three or four virtual book club discussions on a theme chosen in partnership with the water librarian and a unique collaborator. In addition to the book club, there is flexibility in the intern workplan. Other project(s) will be determined by the successful candidate's skill set and interests.

Location:

Madison, Wisconsin (See Covid-19 statement on page 1.)

Work setting:

Office work (60%), Virtual (40%)

Qualifications and Interests:

- Interest in children's literature and related programming
- Ability to work independently and collaboratively
- Good written and oral communication skills
- Creativity