

Freshwater Collaborative of Wisconsin 2020-2022 Report

Executive Summary

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The Freshwater Collaborative of Wisconsin supports a statewide network of freshwater research and training opportunities among the 13 University of Wisconsin (UW) institutions. The Office of Socially Responsible Evaluation in Education (SREED) at UW-Milwaukee is helping the Freshwater Collaborative strengthen its capacity for program monitoring through developing an evaluation strategy, creating data collection tools, and generating reports. The current report summarizes the progress made by 72 projects and the overall Freshwater Collaborative. Survey results from the project leads of 71¹ funded initiatives and other partners engaged with the Freshwater Collaborative were used to examine three broad questions:

- 1. In what ways has the Freshwater Collaborative created a system of shared leadership and collaboration across the UW System?*
- 2. How has the Freshwater Collaborative increased student research opportunities, demonstrated value to students, and increased student engagement?*
- 3. How has the Freshwater Collaborative supported moving research into action?*

In what ways has the Freshwater Collaborative created a system of shared leadership and collaboration across the UW System?

The Freshwater Collaborative increased collaboration across UW System through the its steering committee, curriculum working group, and regular engagement with administrators, faculty and staff throughout UW System. This was done through meetings, presentations, individual conversations, campus visits, and regular email updates. The Freshwater Collaborative's steering committee comprises one faculty representative from each of the 13 UW universities and one representative from UW System. Through monthly virtual meetings and multiple in-person meetings, steering committee members bring the interests, needs, and assets of their institution to the planning and implementation of UW System-wide

¹ One project did not have a data report submission.

and statewide freshwater programming. Topics discussed at these meetings include cross-campus curriculum development, the structure and focus of the Freshwater Collaborative grants program, direction for the Freshwater Collaborative’s strategic plan, development of the Freshwater Collaborative’s mission, and strategies for industry, community, and government partnership formation.

The Freshwater Collaborative steering committee and administrative leadership created a curriculum development working group to identify a plan of action and define the structure of multiple interdisciplinary freshwater certificates. Meetings overlapped with monthly steering committee meetings, with significant development and communication during Freshwater Collaborative administrative meetings.

Freshwater Collaborative supported the UW Water Policy Network, which leverages the expertise of partners from government, industry, academia, and community on freshwater policy issues. Many of these water policy issues address the 10 Grand Water Challenges². With support from both the Freshwater Collaborative and the UW-Milwaukee Center for Water Policy, the UW Water Policy Network supports an institutional structure for collaboration among faculty, researchers, and students throughout UW System. The leadership team for the UW Water Policy Network includes key representatives from UW-Milwaukee, UW-Stout, and UW-Eau Claire.

The Freshwater Collaborative supported 39 projects³ involving collaboration between two or more UW institutions. Programs aimed to recruit, train, and support freshwater sciences students in collaborative research, laboratory skills, and field techniques.

How has the Freshwater Collaborative increased student research opportunities, demonstrated value to students, and increased student engagement?

As part of its initial round of funding provided to UW universities, student engagement primarily involved opportunities for field and research experiences. Across UW universities, the Freshwater Collaborative awarded funding for 29 research opportunities involving

² More information about the 10 Grand Water Challenges can be found here: <https://freshwater.wisconsin.edu/research/10-grand-water-challenges/>

³ Proposals referenced in this report will fall into multiple categories. This means that some proposals will be counted multiple times depending on the category being described.

undergraduate and graduate students participating in research or presenting water-based research findings. These opportunities engaged a total of 187 students across UW universities and at least 85 high school students throughout Wisconsin.

Students engaged in the Freshwater Collaborative reported valuing their experience. A small group of students from two collaborative projects — one for undergraduate students, the other aimed at high school schools — rated most of their activities highly and recommended the programs to other students. Students further reported appreciating their experiences, particularly the opportunity to spend time with other students interested in learning about Wisconsin’s freshwater challenges. To capture student feedback across all initiatives, the Freshwater Collaborative would benefit from the establishment of systems for monitoring student participation and experiences.

Tools for supporting student engagement and incorporating student voice may increase student participation in Freshwater Collaborative initiatives. Student participation was affected by logistic barriers such as access to transportation and the reality that many underserved students need to work year-round. Additionally, some programs faced challenges meeting the legal requirements for engaging minor students. Strategies for mitigating these challenges include leveraging existing resources, such as UW System-designated precollege liaisons, offering stipends for student participation, and incorporating youth voice collection and amplification tools specific to Freshwater Collaborative projects.

To navigate challenges presented by the COVID-19 pandemic, multiple programs provided students with state-of-the-art experiences in research and internship opportunities using online tools made accessible by Freshwater Collaborative support. This strategy could also be employed to allow students without the ability to freely travel or forfeit employment to benefit from Freshwater Collaborative student opportunities.

How has the Freshwater Collaborative supported moving research into action?

The Freshwater Collaborative is building a network to address some of the most pressing water-related issues facing Wisconsin. Faculty and staff working on Freshwater Collaborative-supported initiatives partnered with 141 businesses, corporations, associations, nonprofit organizations, non-government organizations, and government entities. These partnerships provided external partners with support and services that expanded their capacity to

address critical freshwater science issues. Partnerships also provided students with training from working professionals, which better prepared them to enter Wisconsin's freshwater workforce.

Of the 72 projects evaluated in this report, 29 were collaborative research projects. These projects addressed the 10 Grand Water Challenges in 43 Wisconsin counties. Agricultural Water Management as well as Water Quality Safety and Emerging Contaminants were areas of special focus due to their high priority in multiple communities across Wisconsin.

Research findings from Freshwater Collaborative-supported projects have been shared with industry, government, nonprofit, and community partners. Findings have also reached broader audiences through publications and conference presentations, working to center Wisconsin in the freshwater science professional community. Findings from seven projects have been submitted for publication, and findings from at least 24 projects were presented at conferences. Seven project leads also outlined future plans to submit manuscripts for publication or present their findings at conferences.

The Freshwater Collaborative's progress suggests it has laid a strong foundation for developing a skilled and diverse professional workforce that will help serve Wisconsin's freshwater science needs. Through 37 fieldwork, internship, and research programs, students from across the state were trained in high-demand laboratory skills, computational modeling, applied field techniques, and simulation software. Students gained experience in project management, community engagement, and freshwater science communication with government, industry, and community partners. The Freshwater Collaborative also supported six programs that provided field experiences to K-12 students throughout Wisconsin. These opportunities support interest in freshwater science and contribute to the development of students' skillsets to help meet the emerging needs of Wisconsin's freshwater sector.