

**Announcement of Opportunity (21-Jan-2020)  
Freshwater Collaborative of Wisconsin (FCW)**

**Amended 3 Nov 2020 \*\***

**\*\* COVID-19 contingencies:** Given the recent outbreak and the potential significant impacts on research, collaboration, and planning, please detail impact and plans for dealing with the COVID-19 restrictions, adaptation and contingencies for the project proposed, including: possible delay in starting date, schedule, collaborations, student involvement, etc. under a separate heading and section in the proposal.

The Freshwater Collaborative of Wisconsin (FCW) was launched in 2019 to leverage Wisconsin's competitive advantage to be a global leader in freshwater science, technology, entrepreneurship and economic growth by fully utilizing UW System's broad expertise, world class faculty, research acumen and commitment to undergraduate and graduate student training.

A key component to the FCW is fostering collaborative research and initiatives across the 13 campuses, private sector and state institutions to address the water challenges of the 21<sup>st</sup> century. In so doing, it will grow Wisconsin's next generation of water expertise to fuel the water-based economy and meet the need for a knowledgeable and multi-talented workforce in wide ranging water related disciplines.

In July of 2019 the Wisconsin Economic Development Corporation (WEDC) awarded a Targeted Industry Project grant to the University of Wisconsin System to lay the groundwork for a successful, long-term Freshwater Collaborative of Wisconsin. The initial programming goals included in this project are designed to both build the initiative's brand and to provide initial research and student and workforce development support. FCW will lay the foundation for a new era of inter-campus, state agency, and private sector collaboration and partnership, trigger Wisconsin's lead in water sector innovation, and advance a unique platform for linking economic and workforce development with higher education.

The funds provided by WEDC are supplemented by a \$1.4 million funding commitment from the UW System for the Freshwater Collaborative Research Network and additional in-kind support from all UW campuses.

Tackling these contemporary water challenges requires a wide variety of solutions. The FCW, if fully implemented, will address 10 Grand Water Challenges, which is proposed to be phased in at campuses across the UW-System over the next three biennial budgets. This initiative will encompass both research and education with educational offerings spanning undergraduate and graduate degree programs, continuing professional education, specialized training opportunities, and general public awareness.

**10 Grand Water Challenges for Wisconsin (see appendix)**

1. Agricultural Water Management
2. Industrial Water Engineering and Technology
3. Water Quality Safety and Emerging Contaminants
4. Great Lakes Management and Restoration
5. Water Infrastructure: Collection, Distribution, Treatment

6. Water Business and Finance
7. Watershed Management and Restoration
8. Water Security, Protection and Resilience
9. Healthy Recreational and Transportation Water Use
10. Aquaculture/Aquaponics/Water Food Systems

Solutions to each challenge will be underpinned by five cross-cutting themes:

1. Fundamental Research on Water Systems;
2. Driving Technology Innovation;
3. Workforce Development;
4. Resource for Science Driven Water Policy and Law; and
5. Informing Sustainable Management of Water Resources

**The Freshwater Research Collaborative (Pilot phase of FCW).**

The goal of the Research Collaborative is to enable UW System investigators to develop and coordinate their research, training and educational activities across disciplines, organizational, geographic and international boundaries to address the 10 Grand Water Challenges of the FCW's Implementation Plan with *emphasis in this pilot phase on the first four challenges*. The program will provide opportunities to foster new collaborations across system campuses, including encouragement of external partnerships, and will address interdisciplinary topics.

**Tracks/ Approximate Total Funding Available**

- [Track 1: Research Collaboration Summits/Working groups: ~\\$60,000](#)
- [Track 2: Strategic Research: ~\\$500,000](#)
- [Track 3: Undergraduate FCW Interdisciplinary curriculum, training & course development and design: ~\\$240,000](#)
- [Track 4: Freshwater Research Experience for Undergraduate Awards: ~\\$160,000](#)
- [Track 5: Inter-Institutional Undergraduate Training Programs: ~\\$100,000](#)

**Total Funding: ~ \$1M**

**The Freshwater Research Collaborative (Pilot phase of FCW)**  
**Announcement of Opportunity**  
*21 January 2020*

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**Program Description:**

**Anticipated Type of Awards:**

There are several types of awards available as identified by the five Tracks described below.

**Estimated Number of Awards:**

The actual number of awards varies across Tracks.

**Anticipated Funding Amount:**

\$1.1M in total, varies across programs and Tracks.

**Eligibility Information**

Who May Submit Proposals:

- Any institution within the University of Wisconsin System, all 4-year, 2-year campuses, research institutions and centers
- Collaborations with UW-Madison or UW-Milwaukee must include 1 or more of the comprehensives

Who May Serve as PI:

- Faculty and staff at a UW System institution
- In order that the FCW grants focus on developing and growing research across all UW Universities, UW-Madison and UW-Milwaukee may no longer serve as primary PIs for FCW grants in order to promote research at the comprehensive UW Universities

Limit on Number of Proposals per Organization:

- There are no restrictions or limits

Limit on Number of Proposals per PI or Co-PI:

- There are no restrictions or limits

**Please note:** Eligible proposals must include a collaboration between 2+ UW Universities with 1+ of those being comprehensive. We also highly encourage collaborations with industry, policy makers, NGOs, and/or community.

**Proposal Preparation Instructions: \*NB (new 2 April 2020 clarification): proposals should be packaged and submitted as a single pdf file, including all sections.**

See descriptions for individual Tracks. Proposals should clearly identify at the beginning of the title which Track is being proposed, e.g. *“Track 2 Strategic Research: . . .”*

Uniform Proposal Format Requirements:

Cover Page:

- Title beginning with “Track X ...”
- Principal Investigators, contact information (including email)
- Proposing Institution and Institutional Contact for Award (including email)
- Time frame of award
- 10 Grand Water Challenges addressed in proposal

- Amount of FCW funding requested
- Cost sharing proposed
- Number of undergraduate students engaged with or employed in proposal

**Executive Summary (one page):**

- Summarize proposed effort and its relevance to the themes of the FCW
- Explicitly state which of the 10 Grand Challenges are addressed in proposal
- Identify Impact on furthering the goals and objectives of the FCW

**Budget:** Budget information for each institution is to be submitted in a table similar to the one below:

Lead Institution - Budget	Year 1	Year 2	Year 3	Total
Personnel				\$ -
*Fringe Benefits				\$ -
Undergraduate Research Stipend				\$ -
Travel				\$ -
Equipment				\$ -
Supplies				\$ -
Other Direct Costs				\$ -
<b>TOTALS:</b>				
20% Cost-Share				

\* PIs should consult their respective Controller’s office or ORSP office to determine how to budget fringes for these grants. All grant dollars will be awarded directly to individual campuses from state 102 account funds and will be transferred as supply dollars.

**Budget Narrative:** See requirements for individual Tracks (below).

**Budgetary Information:**

Cost Sharing:

Inclusion of cost sharing if required or optional

Matching Funds:

Foregone indirect funds cannot be used as match

Indirect Cost (F&A) Limitations:

F&A costs are excluded. Budgets are for direct costs and cost sharing only.

Other Budgetary Limitations:

Other budgetary limitations apply depending upon award type. Please see the full text of this solicitation for further information.

No equipment costs will be funded in FCW grants

**Award disbursement (amended 10-27-20):**

Awards will be dispersed by the FCW to all collaborating institutions.

**\*\* COVID-19 contingencies:** Given the recent outbreak and the potential significant impacts on research, collaboration, and planning, please detail impact and plans for dealing with the COVID-19 restrictions, adaptation and contingencies for the project proposed, including: possible delay in starting

date, schedule, collaborations, student involvement, etc. under a separate heading and section in the proposal.

**Due dates:**

Submission deadlines and targets vary by Track. Proposals should be submitted to a particular Track according to the program's submission dates.

**\*\*Proposal submission:** Proposals should be approved by the appropriate Office of Sponsored Research or its equivalent prior to submission. Proposal submission will not be accepted without grants office representatives from each collaborative university copied on email.

**Proposal review:** Proposals will be reviewed by the Freshwater Research collaboration steering committee with representatives from all 13 UW System universities (as defined in the WEDC application), or a subset of this group authorized by the Steering committee to conduct reviews. Recommendations for funding will be approved by the full committee. External reviewers may be solicited for specific technical or scientific expertise.

**Review criteria:** Proposals will be assessed based upon their strength in implementing the goals and objectives of the FCW and in capturing the widest possible participation across UW System campuses and programs. In addition, proposals will be judged based upon:

1. Whether the proposed program meets a high standard of Intellectual Merit and Scholarship necessary to advance knowledge and expand the capacity of the State to address the Grand Water Challenges enumerated above;
2. Whether the proposed program(s) accomplish one or more of the following broader impacts including the achievement of societally relevant outcomes:
  - New water-centric training programs focused on undergraduates
  - Amplified marketing and recruiting relating to UW System's position as a destination for students in freshwater education and training
  - Enhanced workforce development programming, including research experiences, training institutes and graduate research
  - Increased partnerships between academia, industry and others
  - Expanded public engagement and literacy on water challenges within the state of Wisconsin
  - Improved water security and safety; management, protection and preservation of water resources for the State of Wisconsin
  - Increased economic competitiveness of Wisconsin
3. **NEW Criteria (2 April 2020):** COVID-19 pandemic adaptations – what contingencies are proposed for dealing with potential restrictions imposed by the COVID-19 pandemic, to the extent known and anticipated at the time of submission.

**How to submit:**

Submissions should be submitted as a single pdf file, emailed to: [freshwater-collaborative-AO@uwm.edu](mailto:freshwater-collaborative-AO@uwm.edu)

Proposal submission will not be accepted without grants office representatives from each collaborative university copied on email.

Please note "Submission to Track X" in the subject line. Receipt of submission will be acknowledged by reply email.

**Summary of Proposed FCW Awards by Track (see table below):**

Track	Description	Max. per award	# anticipated	Total max. funding anticipated	Target submission dates	Target award date
1	<a href="#">Research Collaboration Network Summits &amp; Workshops</a>	\$ 10,000	4-8	\$ 60,000	Anytime	~ 1 mo. post submission
2	<a href="#">Strategic Research Support</a>			~\$ 500,000	Currently not accepting applications due to budget constraints	~ 2-3 mo. post submission
	Research / PI Support: Max. per PI	\$ 30,000 / PI				
	Required Supplemental Undergraduate research stipends	\$ 4,000				
3	<a href="#">UG FCW Interdisciplinary training &amp; course development</a>	\$ 12,000	20	~\$240,000	Anytime	~ 2 mo. post submission
4	<a href="#">Research Experience for Undergraduate Fellowships</a>					
	Summer Fellowships	\$ 10,000	8	\$ 80,000	1 March	1 April
	Academic Fall Semester Fellowships	\$ 5,000	8	\$ 40,000	15 June	15 July
	Academic Spring Semester Fellowships	\$ 5,000	8	\$ 40,000	15 September	1 November
5	<a href="#">Inter-Institutional Undergraduate Training Initiatives</a>	\$ 25,000	4	\$ 100,000	Anytime	~ 1 mo. post submission

**The Freshwater Research Collaborative (Pilot phase of FCW)**  
**Announcement of Opportunity** (21 Jan. 2020, amended 2 April 2020 )  
**Track Descriptions:**

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**Track 1: Research Collaboration Summits/Working groups**

Research Collaboration Summits & Working Groups are designed to foster communication and promote new collaboration among UWS faculty and scientists and relevant stakeholders with diverse expertise and who share a common interest in a new or developing area freshwater science, engineering or policy. It is anticipated that these activities will contribute to furthering the goals of the FCW by encouraging the formation of cross campus collaborations, groups and networks. RCS awards are intended to foster networking activities and thus will not directly support costs related to primary research.

**Summits** may take the form of 1-2-day workshops bringing investigators (~20) together from across UWS, as well as other stakeholders and private and public sector experts addressing long term issues of water resource conservation, policy and management. **Working groups** bring together smaller groups (8-12) to make detailed progress on focused water issues with solutions on the time scale of months to years.

Proposals should identify:

- a clear theme as the focus of its activities.
- how the proposed activity relates to the Grand Water Challenges and the goals of the FCW, and should specify the following:
  - questions that will be addressed
  - activities that will be undertaken
  - new groups of investigators that will be brought together
  - products that will be generated by network activities (including a written summary)
  - plan to disseminate information about the network and opportunities to participate
  - expected benefits of the network's activities in moving a field forward and the implications for the broader community of researchers and educators.

Budgets are limited to \$10,000 for travel, support costs, etc. No more than \$1,500 in salary (including fringe) for workshop support and reporting. Approximately 4-8 awards anticipated. Total funding available ~\$60,000.

Target dates for submission: Open call - proposals may be submitted at any time.

Proposal format:

1. Cover page (see above)
2. One-page Executive Summary
3. Maximum 6-page single spaced Narrative, describing topic and including proposed dates/timeline, membership of the leadership (steering committee) and responsibilities (facilitation, report writing, logistics support, etc.)
4. **\*\*COVID-19 restriction planning**
5. List of Potential Participants and stakeholder groups (non-binding)
6. Budget and Budget Justification – maximum 2 pages
7. CVs of steering committee members (max 2 pages each, NSF format).

## Track 2: Strategic Research:

Note: As of October 2020, Track 2 is no longer accepting applications due to budget constraints.

Projects under Track 2 Strategic Research are designed to support interdisciplinary research across two or more UW System campuses that address one or more of the Grand Water Challenges identified in the FCW. Proposals may be submitted that address any of the 10 Grand Challenges, however, Grand Challenges 1 and 3 (*Agricultural Water Management* and *Water Quality Safety and Emerging Contaminants*) are considered high priority for this Track and for the state in keeping with the Governor's Year of Safe Drinking Water. Proposals should clearly identify which of the challenges it falls under and how they incorporate the five cross-cutting themes.

Undergraduate research awards are a required component of the research plan.

Budgets are limited to \$30,000 per PI in research costs + up to \$4,000 per student for supplemental undergraduate fellowships. Multiple students may be included, each to receive up to \$4,000. No more than \$10,000 (including fringe) of the PI portion of research costs may be in salary for the PI. Cost share of 20% is required and may be in any form, including in-kind support. Total funding available ~ \$500,00 for research costs (~20 PIs) including \$80,000 (~20 students) for undergraduate awards. Awards may be for up to 24 months.

Proposal format:

1. Cover page (see above)
2. One-page Executive Summary
3. Maximum 15-page single spaced Narrative describing: proposed research, its intellectual merit, relevance to the Grand Challenges, relationship to Cross-cutting themes, and potential for promoting the Freshwater Collaborative across UW System.
4. **\*\*COVID-19 restriction planning**
5. List of references
6. Timeline and Milestones
7. Budget and Budget Justification – maximum 2 pages. Cost sharing commitments should be clearly identified.
8. CVs of Principal Investigators (max 2 pages each, e.g. NSF format).

Target dates for submission (revised 10-27-20): **No longer accepting proposals.**

Review Criteria:

- Scientific merit
- Relevance to Grand Challenges and Wisconsin's water resources
- Relationship to cross-cutting themes
- Potential for promoting Freshwater Collaborative of Wisconsin and cross-campus collaborations and team building
- Significance of potential outcomes and impact
- Potential for enhanced educational experience for undergraduate students

### Track 3: Undergraduate FCW Interdisciplinary curriculum, training & course development and design

The goal of Track 3 is:

- 1) To advance the development of learning and workforce development training tools and offerings within FCW
- 2) To stimulate interdisciplinary instruction and training opportunities across UWS campuses
- 3) To develop innovative, new courses and curricular components, including on-line, that will benefit students from all disciplines, as well as students whose principal focus is freshwater
- 4) To help develop the common curricular components that will be the basis for introduction to freshwater for all UW System students
- 5) To develop the mechanics of implementing inter-campus curriculum
- 6) To help us form and advance the FCW undergraduate program

Proposal narrative should include:

- 1) Course and program description
- 2) Learning outcomes
- 3) When the course/training opportunity would be typically offered and by whom
- 4) Mode of instruction/training proposed: online, blended, hand on, internship, etc.
- 5) Designation of Development team – should include multiple campuses
- 6) Anticipated student demand, class size, etc.
- 7) Collaborators or groups with whom you expect to work to develop and implement the program (e.g. academic departments, Libraries, academic support services, etc.)
- 8) Description of how the activity will be assessed – student success, feedback, etc.
- 9) **\*\*COVID-19 restrictions** – description of planning for contingencies needed for ongoing COVID-19 restrictions

Target date for submission: Open call - proposals may be submitted at any time.

Proposals should not exceed 10 pages single spaced + a budget of \$12,000 maximum. Total funds available ~ \$240,000.

Proposal format:

1. Cover page (see above)
2. One-page Executive Summary
3. Maximum 10-page single spaced Narrative (see above for content) describing potential for promoting the Freshwater Collaborative across UW System.
4. **\*\*COVID-19 restriction planning**
5. List of references
6. Budget and Budget Justification – maximum 2 pages. Cost sharing commitments (encouraged but not required) should be clearly identified.
7. CVs of Principal Investigators (max 2 pages each).

#### Track 4: Freshwater Research Experience for Undergraduate Awards (FREU) (ongoing program).

**Objectives:** This award program seeks to initiate collaborative undergraduate research, scholarship, and creative activity, while simultaneously promoting faculty research collaborations in Water Resources across UW System universities.

**Principles:** Successful, new research and scholarly collaborations develop most readily when collaborators share strong professional relationships, when centered around students, and when working in an environment of reasonable expectations surrounding deliverables. These factors promote trust and provide an environment promoting creative intellectual risk-taking.

**Call:** This program seeks proposals to support undergraduate students engaged in freshwater research, scholarship, or creative activities for the, summer and fall of 2020 and spring of 2021 if funding is available.

Proposals should clearly relate to Wisconsin's freshwater resource, should be of significant magnitude to engage an undergraduate water fellow for the duration of the award, and should be collaborative in nature.

This call is limited to UW System institutions, based upon the following qualifying standards:

- **Research, Scholarship, or Creative Activity Proposals:** Proposals are sought from each UW System campus seeking to host UW System undergraduate students with water research awards.
- **Collaborative Project Selection:** Each campus is free to determine their own internal review process, provided that selected proposals: 1) clearly relate to Wisconsin's freshwater resource, 2) are of significant magnitude to engage an undergraduate fellow in a meaningful high impact experience for the duration of the award, and 3) are collaborative in nature, ideally to include at least one faculty member from a different UW System university.
- **Undergraduate Water Research Student Selection:** Eligible students must be enrolled as a degree-seeking student for the fall 2020 or the semester in which the fellowship applies at a UW System institution and hold a minimum of Sophomore standing. Undergraduate students should have credentials predictive of their successful completion of the research. Stipends and related expenses for students during the academic year are limited to \$5000 per semester. Summer awards, including stipend, housing, and research expenses are limited to \$10,000. A minimum of 50% of the funds should be allocated for the student stipend. Stipend requirements vary by campus and could take the form of hourly pay, salary, or scholarship. Undergraduate summer water awardees are expected to fully engage in summer experiences and notify host and sponsor PI's of any planned summer absences in advance of the start of the summer experience. Undergraduate awardees participating during the academic year are permitted to receive independent study credit at their home institution while holding this award.
- **Presentation of Research.** Undergraduate award recipients are required to produce a co-authored poster, visual, or audio media product describing their research and contributions made by collaborating campuses. The proposal should clearly identify a proposed venue(s) for the presentation(s). Funds should be budgeted for student presentation of research either as direct costs or as matching support.
- **Requirements of Host and Recipient Institutions:** Each host and recipient institution must provide a sponsor and supervising PI to monitor student progress. Host and sponsor PI's are

required to complete a pre-experience meeting to reviews project goals and student attributes, a mid-summer / mid-semester check-in, and complete a co-drafted one-page end of experience report. Host institution PI-s are expected to oversee the daily activities of REU, and collaborate with fellows on their final poster, visual, or audio media product. Host institutions assume fiscal responsibilities for funds associated with water fellows.

- **\*\*COVID-19 restriction planning.** Description of contingency plans for dealing with possible ongoing COVID-19 restrictions and impacts.

Target dates for submission: 15<sup>th</sup> of December for spring semester, 1 March for summer session and 15 June 2020 for fall semester.

Proposals should not exceed 10 pages single spaced + budget. Total funds available ~ \$150,000

Proposal format:

1. Cover page (see above)
2. One-page Executive Summary
3. Maximum 10-page single spaced Narrative addressing: proposed UG research project, relationship to Grand Challenges and Cross-cutting themes, potential for enhancing student success and experience gained, Presentation of research – proposed format and venue
4. **\*\*COVID-19 restriction planning**
5. List of references
6. Budget and Budget Justification – maximum 2 pages. PI salary (including fringe) support is limited to \$1,000 for academic year awards, and \$2,000 for summer awards.
7. CVs of Principal Investigators (max 2 pages each), CV of student (if known)

## Track 5: Inter-Institutional Undergraduate Training Programs:

The goal of this Track 5 is the implementation of unique cross campus training programs, e.g. student exchanges, summer institutes and courses, internships, etc. with a focus on hands-on training in the field or workforce environments.

Proposals are open to any innovative mechanisms, and there is no preconception of what constitutes a “Training Program”. Unlike Track 3 which is for the development/design, Track 5 is for implementation of programs that are more “ready to go”. Opportunities to participate should be open to any student within the UW System and thought should be given to facilitating such participation. Campuses should take advantage of their unique facilities and centers when designing these hands-on offerings. Funds may be used for supplies and equipment, travel, student support, marketing, etc. Anticipated tuition revenue (if applicable) should be estimated and a description of how it will be proportioned among collaborating institutions should be included. Cost share is encouraged.

Target date for submission: Open call - proposals may be submitted at any time.

Up to 4 awards anticipated at up to \$25,000. Total funding available ~\$100,000

Proposal format:

1. Cover page (see above)
2. One-page Executive Summary
3. Maximum 6-page single spaced Narrative describing the Inter-institutional Undergraduate Training program and the potential for enhancing and furthering the Freshwater Collaborative.
4. **\*\*COVID-19 restriction planning**
5. Budget and Budget Justification – maximum 2 pages.
6. CVs of Principal Investigators (max 2 pages each).