

Request for Concept Papers (RFCP)

2022 Grant Program

RFCP Issued: 6/18/2021

Submission Deadline: 7/26/2021 by 11:00 am central

Budget: Total budget shall not exceed \$50,000

Who is WQRF?

The [Water Quality Research Foundation \(WQRF\)](#), formerly the Water Quality Research Council, was formed in 1952 to serve with the guidance and assistance of the Water Quality Association (WQA) and its members as a universally recognized, independent research and education sponsorship organization. The mission of WQRF is advancing knowledge and the science of high quality, sustainable water. WQRF's vision is water quality improvement through relevant research.

Since inception, WQRF has sponsored numerous research studies which have examined a broad range of water chemistry, technology and environmental impact issues, generated essential water technology use, effectiveness and consumer information, positively impacted legislative change, and helped advance efficiencies and methodologies in product certification, evaluation and testing.

Grant Program Purpose

The grant program allows academic and independent researchers flexibility for direct submission of unique and interesting study proposals which are topical to the WQRF research agenda.

Research Agenda Categories for 2022 Grant

For the 2022 grant, WQRF will award funding to one project which falls under one or a combination of the following research agenda categories:

Final Barrier: Investigate point of use (POU) and point of entry (POE)/whole house water treatment devices as a means for sustainable treatment to create more opportunities for industry professionals to provide better quality water to more people.

Emerging Contaminants: Research to aid or support implementation of technologies to provide cost effective options for emerging contaminants in drinking water.

Sustainability: Investigate ways to sustain the industry, help protect the environment and aid adoption of sustainable treatment options including reuse, reclamation and other water treatment technologies for agencies or localities.

Detailed information on the research agenda categories is provided in Appendices B, C, and D.

Visit WQRF.org to learn more about the Foundation's ongoing and completed research.

Requirements for Researchers

Researchers must be well-qualified and have expertise in point-of-use/point-of-entry (POU/POE) drinking water treatment technologies. The names, qualifications and detailed curricula vitae of primary investigators involved in this project must be provided.

The researchers must have the facilities and capabilities to accomplish this project or must provide a list of the proposed partner organizations and their qualifications required to accomplish this project. Again, a list of the names, qualifications and detailed curricula vitae of primary investigators from those partner organizations should be provided.

Restrictions

Please read this section carefully. **You are encouraged to consult WQRF if you believe your concept encompasses one or more of these restrictions.** Concepts whose scope fall within any of these restrictions will not be funded by WQRF:

- The concept must be scoped to prevent use of the study to promote or disparage a specific product model, company/organization or brand name. It is WQRF's policy that brands, models, and manufacturers are confidential, only the specifications of the products tested can be included in the report(s).
- The research will not be of a type ordinarily expected to be carried on by private enterprises in the ordinary course of research and development, the testing and inspection of materials or products, particularized market or consumer research or the design and construction of water treatment equipment, products or parts.
- While WQRF supports the many benefits of product validation evaluation and testing, WQRF does not fund product development-related activities, such as validation testing of new products or emerging technologies.
 - Projects that involve general validation or study broadly the benefits of certain categories of technologies relative to other categories of technologies have been funded (e.g., the benefits of softening study) only when they were scoped to benefit the entire industry and not to promote a specific product, benefit a specific manufacturer or develop intellectual property.
 - Consistent with this policy, WQRF bylaws require that any patents or trademarks owned by WQRF resulting from research they fund shall be made available to the public-at-large on a non-discriminatory basis.
- Researchers are prohibited from having a commercial interest in any products or technologies proposed for inclusion in the research study.

Concept Paper Vetting/Selection Process

All concept papers submitted in response to this request will be reviewed by the WQRF Scientific Consultant and designated WQRF research task force. The selection process is overseen and facilitated by WQRF staff. The task force is comprised of subject matter experts who volunteer their time to WQRF. It is anticipated that the concept paper selection process will complete within 1-2 month(s), depending on the number of concepts submitted.

Researchers may be contacted for further correspondence regarding their concept paper throughout the selection process. If your concept is moved forward in the selection process, a full proposal will be requested. If you have questions relating to the requirements/format of a full proposal, contact Kayla Heriaud.

In response to full proposals, it is common for the task force to request:

1. Written responses to questions
2. For the research team to present its proposal to the Task Force and answer any additional questions via a webinar
3. Minor revisions/additions to the proposed approach and/or deliverables
 - a. Any requests accepted by the researcher will require a revised proposal

The length of the proposal selection process will vary depending on the number of proposals received, their complexity and the Task Force's availability to engage in discussions. Historically, the proposal selection process has taken 3-5 months. In instances where the proposals received are exceptionally detailed in the methodology section, the duration of the proposal selection process may be shortened. WQRF staff will inform all bidding researchers of the timeline as the selection process progresses.

After the Task Force has selected a proposal for its funding recommendation, all bidding research teams will be notified of the outcome as it pertains to their respective proposal. The proposal selected for the funding recommendation is then presented to the WQRF Board of Directors for review, due diligence, and a decision on acceptance and approval of funding.

Selection Criteria

Concepts will initially be evaluated against the requirements and criteria as presented in this RFCP. If you are unsure of the requirements, you are encouraged to reach out to WQRF prior to submitting your proposal. Contact information is listed under the ["Questions?"](#) section in the RFP.

Concept papers meeting the requirements will also be evaluated by:

- Assessing the potential impact of the research compared to the cost.
- The researcher's credibility, previous experience, knowledge of POU/POE treatment technologies as applicable to the proposed work, qualifications, and prior publications.
- The uniqueness of the proposed research:
 - Fulfills an industry need that is not currently fulfilled in any other way. (Most unique)
 - Presents a unique opportunity for the industry to potentially improve upon currently available solutions for an industry problem/challenge. (Moderately unique)
 - Solution, technologies, or data are already available or mostly available to address the issue. (Least unique)
- Other factors may be considered where applicable

Business Requirements and Responsibilities

WQRF reserves the right to partially fund proposals by awarding portions or phases of proposed projects. If WQRF decides to partially fund a proposal, it will do so in a manner that does not prejudice any applicants or affect the basis upon which the proposal, or portion thereof, was evaluated and selected for award, and therefore maintains the integrity of the competition and selection process.

In support of an accepted research project, WQRF ordinarily would proceed as follows:

- WQRF will provide the researcher with any background information needed, such as a list of industry and other interested parties and stakeholders.
- The WQRF Research Task Force and WQRF technical staff ordinarily will take an active role in the technical review of progress/interim reports and acceptance of the final report. They may seek input

from the WQA Water Sciences Committee, particularly with respect to industry specific knowledge or operations to aid the researcher.

- WQRF will track progress and provide any necessary coordination with industry stakeholders throughout the course of the research, will supply technical input and will facilitate any support and input requested from the WQA Water Sciences Committee.
- WQRF will provide public access to an executive summary and the full report. Ordinarily, upon release or publication, the researcher will be permitted to make the report available as best determined.

The researcher will enter into a research sponsorship agreement with WQRF, the terms of which broadly will include the following commitments from the researcher:

- Undertake, manage and perform all aspects of the contracted research and any necessary support activities.
- Complete the work in a timely manner according to the project schedule.
- Engage with WQRF, its Research Task Force and its technical staff and provide responses to WQRF questions relating to progress and coordination, as well as comments on progress/interim reports.
- Agree that all intellectual property will be owned by WQRF or perpetually licensed to it without royalty or charge:
 - Generally, WQRF will own the entire right, title, and interests, including all copyrights and other intellectual property rights, in and to all Project Intellectual Property developed by WQRF personnel. Project Intellectual Property that is jointly developed by the researcher and WQRF personnel will be jointly owned by the researcher and WQRF.
 - Generally, WQRF will reserve the intellectual property associated with the final report submitted to WQRF, including the copyright thereof, and all rights to distribute the final report. WQRF will make publicly available the research funded and knowledge gained through research, and the researcher ordinarily will be permitted to make available and publish sponsored research and use the knowledge gained to further its own research. However, no research results can be published by the researcher without prior review by WQRF.
- Publish the study in a peer-reviewed publication:
 - It is WQRF's preference that after review and acceptance of the final report, the researcher will seek to publish the study in a peer-reviewed publication. Whenever referencing or publishing the study, or information and/or data derived from the study, researchers must cite as its source to the report delivered to WQRF. The study should be submitted for peer-review publication within 6 months from the date that WQRF accepted the final report. WQRF does not commit that the research will be withheld from the public during the 6-month period.

Confidentiality

All concepts submitted to WQRF will be treated as confidential and will not be shared beyond WQRF, its Research Task Force and its technical staff, except that WQRF may grant access to members of the WQA Water Sciences Committee and members of identified WQA committee and task forces as well as WQA staff members all of whom would act on behalf of WQRF under specific confidentiality restrictions.

Concept Paper Format

Proposals shall follow the format provided in [Appendix A](#).

Questions?

The contact for this RFP is Kayla Heriaud. Questions can be directed to her at any time.

Contact info:

Kayla Heriaud

Research Project Leader

630-929-2599

kheriaud@wqrf.org

Due Date

Concept papers must be submitted to [Kayla Heriaud](#) no later than July 26th, 2021 by 11:00 am central.

APPENDIX A – Concept Paper Format

Concept papers must *not* be password protected to restrict editing. Upon receipt, WQRF will add a watermark to the concept paper to identify it as confidential and will password protect the document prior to its internal distribution. Concept papers must be single spaced and utilize either 12pt. Times New Roman font or 12pt. Calibri font. The document must not exceed 4 pages in length; however, it is acceptable to submit a concept paper that is less than 4 pages. Please note that references and curricula vitae do not count towards the page limit. Concept papers should include the following requirements, and if necessary, other sections may be added:

Introduction and literature review – Include an overview of the proposed work, objective(s), anticipated outcome(s), and a review of related research or publications which define what is already known about the subject matter of the research.

Research plan and methodology – Briefly describe the proposed experiment(s), any equipment/methods which will be used to complete the work, and any past or present experience using data sources relevant to the proposed work. This section is intended to be a high-level overview as there will be an opportunity to present the plan in greater detail if the concept is selected for a full proposal.

Deliverables – Concept papers must include a statement that indicates the primary investigator(s) have reviewed and agreed to provide the required deliverables as outlined in the 2022 Grant RFCP. Concept papers should not directly list all the required deliverables as there will be an opportunity to expand upon this section if the concept is selected for a full proposal. The required deliverables for this project are:

- Ongoing research progress reports – Formal progress reports should be prepared and submitted at least quarterly, although more frequent, informal updates on progress are encouraged. For each progress report, WQRF will organize a conference call between the researchers and the task force. During this call, the researchers are asked to present the progress made from the last report and respond to questions from WQRF. Additional updates may be requested on an as-needed basis.
- Drafts of the final report and the 1–3-page executive summary document
 - The executive summary is a stand-alone document intended to summarize the purpose, methods, findings of the research, and future research opportunities identified. The information and data included in the executive summary must be readily understood without referring to the full report. Examples of executive summaries can be found at www.wqrf.org/completed-studies.

- The WQRF Task Force will provide technical review of the drafts of the final report and the executive summary.
- The final report and executive summary documents
- A presentation of the findings at a relevant conference

Please describe any additional deliverables that will be provided as a result of the proposed project. Additional deliverables might include articles in an industry magazine, raw data, infographics, hosting a workshop, an interactive data tool, webinar presentations, etc.

Project timeline – The total project timeline shall not exceed 2 years from the start date. Please state the time needed to complete the project. If a full proposal is requested, a detailed timeline will be prepared at that point in time.

Budget – Total budget shall not exceed \$50,000, the maximum funding available for the project. However, researchers should attempt to submit proposals for the lowest dollar amount that is practical. Include the dollar amount requested for the project. It is WQRF's policy that indirect costs shall not exceed 13% of total direct costs. Please note that if the concept paper is selected for a full proposal, a detailed budget break down will be requested.

Potential conflict circumstances statement and disclosure of any additional organizations who would potentially contribute to this project – Include a statement reporting any direct or indirect facts or circumstances which could potentially create a conflict of interest. For example, if the results of proposed study could further the interests of a company with which the researcher or the research organization has a financial interest or relationship (including any contractual agreement or practice to provide testing, certification, consulting or other services (or is negotiating such an agreement), that is to be disclosed as a potential conflict circumstance. WQRF will have final authority in its sole discretion over whether a potential conflict circumstance represents a disqualifying Conflict of Interest. Please also disclose the name(s) of any organizations who you have contacted to potentially contribute to this project (in-kind or monetary contribution).

Credentials and qualifications – In this section, please include:

- Details relating to student involvement on the project (note: only required if the PIs are planning to have student(s) on the research team):
 - a. Are the PI(s) seeking undergraduate, graduate, and/or doctoral student(s)?
 - b. How many students will be recruited to the research team?
 - c. What responsibilities will be assigned to the student(s)?
 - d. How often will a PI meet with student(s) for status updates and oversight?
- A statement of qualifications, previous experience, and related publications (including full curricula vitae) of the primary and supporting investigators. Be sure to highlight any experience you have with POU/POE technologies relative to the proposed research concept.
- Please note that this section does not count toward the 4-page limit for concept papers.

References – Cite any references used to develop the content for the concept paper. Please note that this section does not count toward the 4-page limit.

APPENDIX B – Final Barrier

Final Barrier – Investigate point-of-use and point-of-entry (AKA: whole-house) devices as a means for sustainable treatment to create more opportunities for industry professionals to provide better quality water to more people.

Even though the water leaving a municipal facility may meet the Federal Safe Water Drinking Act standards, it may not be of that same quality when it comes out of the faucet. A lot can happen once the water has left the station:

- Formation of disinfection byproducts
- Water flows through corroded pipes and fixtures
- Inorganics from biofilms can be released into the water
- Contaminant intrusions from distribution line breaks

Point-of-Use (POU) devices treat water at the point of consumption. The technology acts as the final barrier to the contaminants before the water is consumed or used.

Point-of-Entry (POE) devices are whole-house treatment systems mainly designed to reduce contaminants in water intended for showering, washing dishes and clothes, brushing teeth, and flushing toilets.

Some technologies that are commonly applied at the POU, but may also be applied at the POE, include the following: Activated Carbon, Reverse Osmosis, Distillation, UV Light.

These “Final Barrier” POU and POE products can provide a higher quality of drinking water when needed, especially for the protection of people who fall into a higher risk category. Better quality water includes both aesthetic issues to protect property and health issues to attain higher levels of public health.

“Final Barrier” technologies can also be utilized by small public water systems to be in compliant with the requirements in the Safe Drinking Water Act.

Research concepts under the Final Barrier research agenda category should aim to fill in knowledge gaps which would facilitate POU and/or POE products providing better quality water to more people.

Visit WQRF.org to learn more about the Foundation’s ongoing and completed research.

APPENDIX C – Emerging Contaminants

Emerging Contaminants – Research to aid or support implementation of technologies to provide cost effective point-of-use and/or point-of-entry treatment options for emerging contaminants.

Emerging contaminants in drinking water that WQRF is tracking or is aware of (listed in no specific order) include, but are not limited to:

- Contaminants which have been, or are currently being, monitored through the Unregulated Contaminant Monitoring Rule (UCMR)
- Pharmaceuticals, personal care products (PPCPs)
- 1,4-dioxane
- Antimicrobial resistant bacteria
- PFAS – PFOA and PFOS are two well-known examples
- Microplastics
- Cyanotoxins
- Artificial sweeteners (e.g. sucralose)
- *Naegleria fowleri*
- Boron
- Pathogenic mycobacteria
- Flame retardants (not PFOA or PFOS); e.g. TCP
- 2-methylisoborneol (MIB)
- Pesticides/herbicides (must be unregulated at federal level to fit the scope of this request)
- Perchlorate
- Adenoviruses
- *Legionella*

Please note that research concepts do not need to be limited to the emerging contaminants listed in this appendix. Researchers are encouraged to submit concepts that are timely and will help advance knowledge and the science of high quality, sustainable water.

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APPENDIX D – Sustainability

Sustainability – Investigate ways to sustain the industry, help protect the environment and aid adoption of sustainable treatment options including reuse, reclamation and other water treatment technologies for agencies or localities.

Sustainability is about meeting the needs of the present without compromising the ability of future generations to meet their own needs. An example of a study fitting the “sustainability” research agenda category is discussed below.

Currently underway is the WQRF-funded Sustainability Comparison Study, “Assessing Centralized and POU/POE Treatment for Small System Compliance”. This study is utilizing real-world data to compare the human, environmental, and economic impacts of centralized drinking water treatment upgrades needed to instead utilizing residential POU/POE treatment in small community water systems in the United States. Research results will be used by the industry to identify and understand in which contexts POU/POE might yield the most benefits when used by small communities for compliance needs. This study is anticipated to complete in Spring 2022. To learn more about the ongoing research, visit WQRF.org.

WQRF looks forward to reviewing research concepts submitted under this category that can help the POU/POE industry become a leader in sustainability.