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Student Water Innovation Award

The Water Center at Penn along with the collaboration of our academic, corporate, and NGO partners will grant our first Student Innovation Awards in the Fall of 2024. Applications for the awards should be interdisciplinary and will be open to graduate and undergraduate students across all schools at Penn.

Goal

The challenges confronting local and global water systems and watersheds are varied but endemic, and the Water Center recognizes that it takes creative minds to develop innovative solutions. We hope this award inspires students to reach for more innovative, efficient and climate ready solutions to our most pressing water issues, while developing the next generation of water leaders.

Overview

The Water Center at Penn is an applied research and policy center working to identify integrated solutions to the challenges facing water systems and watersheds. We work alongside communities, bringing their knowledge and expertise to solutions, addressing their water challenges, sharing power and responsibility, and encouraging them to take the lead. With this award we hope to advance innovation solutions to communities' most pressing water challenges.

Applications will include student resumes, transcripts, two academic recommendations, and a concept brief for water innovation that addresses one of our four identified topic areas. The concept brief should propose an innovative solution to an existing challenge in the water sector. The proposed innovation should address or directly relate to one of the questions listed under our topic areas, see the Application Specifications section for more details. The selection will be made by the Water Center at Penn and an interdisciplinary panel of judges.

Based on input from our academic and corporate partners and our research into trends in the water sector, the Water Center developed the following topics for applicants to focus their innovations on:

■ **WATER REUSE**

- For many communities in the Northeast [MegaRegion](#) (roughly defined as the Delaware, Chesapeake, and Hudson River Watersheds), [water reuse is not currently a priority](#).
 - What are opportunities for water reuse in the Northeast MegaRegion, and other regions where water is perceived to be less scarce?
 - How can we implement water reuse when water quality is the driver?

■ **PFAS**

- In April 2024, the US EPA finalized the [National Primary Drinking Water Regulation Maximum Contaminant Levels](#) (MCLs) for six Per- and Polyfluorinated Substances (PFAS) in drinking water. To better understand the [potential impacts of PFAS on communities](#)

[and water systems across the nation](#), we are interested in learning more about the following questions.

- Considering possible supply chain complications, what should water systems consider when selecting filtration technologies?
- What are potential PFAS disposal and destruction strategies that minimize harm to the environment?
 - [USEPA Interim Disposal and Destruction Guidance](#) (April 2024)
- **NATURE-BASED SOLUTIONS TO URBAN WATER CHALLENGES**
 - Cities across the Northeast [MegaRegion](#) are grappling with the impacts of climate change on combined sewer systems. At the same time, the [EPA is reconsidering their CSO policy](#) to address what will be required of combined sewer systems at the completion of their Long Term Control Plan. As these issues are addressed, understanding the role, effectiveness, and current and future challenges of [nature-based solutions](#) becomes even more critical.
 - What can nature-based solutions truly deliver at the community level in terms of flood mitigation, water quality improvement, and triple bottom line benefits?
 - At what scale should nature-based solutions be implemented?
- **ENERGY EFFICIENCY IN WATER PRODUCTION AND TREATMENT**
 - The global energy demand for water treatment is growing and, with it, an emerging need to treat and reuse water sources. This increasing demand is being driven by quickly developing populations, the expansion of water utilities to new communities, the growth of industries that rely on clean water, and the consequences of pollution complicating the treatment of water sources.
 - How can water systems effectively implement [energy-efficient technologies](#)?
 - What types of innovative public private partnerships can advance the research and capital costs needed to realize energy efficiency in water utilities?

Application Specifications

Applications should not exceed 3 pages (further research is expected of award winners – see the Deadline section for additional details), must be submitted by students in good academic standing at the University of Pennsylvania. Submissions should be emailed to emmade@sas.upenn.edu with the email subject of “Student Water Innovation Award” and should include:

- Title
- Name and signature of academic advisor and/or project mentor (**required**)
- Short overview of the existing challenge
 - This should include a literature review that explains that status/severity of the challenge, a review of existing solutions, and justification for why this innovation is necessary.
- A description of your proposed innovation
 - Proposed innovations should be feasible.
 - Innovations can come in any form, including but not limited to policies, GIS mapping, decision making frameworks, new data collection, new concept designs / engineered blueprints, advanced technologies, and more.
 - Please explain how you would expand your proposal should be selected as a finalist.
- Potential funding and execution

- How would you build a pilot program around this innovation?
- Please include realistic timelines and potential funding opportunities that would make your proposed innovation a reality.
- Bibliography (3-5 sources)
- Resume and transcripts attached separately (these do not count towards the 3-page limit)

Deadline

The deadline for application submission is **September 30, 2024**. Submissions should be emailed to emmade@sas.upenn.edu with the email subject of "Student Water Innovation Award". Awards will be announced at an awards ceremony at the Water Center's Careers in the Water Industry event on October 17, 2024. Each winner will be featured on The Water Center's website, social media outlets, and email newsletters.

There will be 2 award recipients, and each recipient will receive a **\$2,000 prize** (*\$500 will be received following their presentations and an additional \$1,500 will be received following the successful completion of a final report due in the Spring semester that outlines the specifics of their proposed innovation*). The final reports should follow the format of a funding proposal that may be used to turn the proposed innovations into reality.

Selection of Finalists

- There will be one finalist in both the graduate and undergraduate categories
- Finalists **must** present at the Water Center's October 17th, 2024 event
 - Graduate and undergraduate finalists must present a 5-minute ted talk style presentation at an in-person event on Penn's campus on October 17th to be eligible to receive an award
 - If selected, award winners are expected to complete a final report due in the Spring semester that outlines the specifics of their proposed innovation
- The selection will be made by the Water Center at Penn and a panel of judges

THANK YOU TO OUR SPONSORS WHO MADE THIS AWARD POSSIBLE:

