

Delaware River Watershed Initiative

Delaware Watershed Research Fund, Request for Proposals 2017

Please note the following important dates/deadlines:

June 9, 2017	Information Session
June 23, 2017	Letter of Intent
July 21, 2017	Full Proposal Invitations
August 25, 2017	Full Proposal Due
October 20, 2017	Funding Decision

1. Introduction

The [Delaware Watershed Research Fund](#) (DRWF) provides funding grants to support research that builds on the goals of the [Delaware River Watershed Initiative](#) (DRWI). The DRWF is funded by the [William Penn Foundation](#) (WPF) and administered by the [Academy of Natural Sciences of Drexel University](#) (ANS).

The DRWI is a strategic, watershed-based initiative focusing on water quality issues within the Delaware Basin. It takes a holistic approach of scientific monitoring, land conservation, and restoration implementation, bringing together multiple communities, agencies, stakeholders, NGOs, and technical experts.

In 2017, the DRWF is making available a total of \$1 million with the intention of building research around the human, social dimensions of watershed protection, particularly those that relate to the translation of watershed science into practice. Applicants are encouraged to use the work of the DRWI to model and inform proposals for use of these funds. Further details are provided in Section 2.

2. Research Priorities

The **Delaware Watershed Research Fund** supports the broad goals of the **Delaware River Watershed Initiative** to address issues of water quality and its stressors in the Basin. The DRWI has substantial civic and organizational elements that are key to the application of both scientific knowledge and financial resources for watershed protection.

Past research projects funded by the DRWF have emphasized watershed related studies in the natural and physical sciences (e.g. watershed ecology, hydrology, environmental chemistry, etc.) Projects were prioritized around their likelihood of increasing understanding of biological, chemical and physical processes in the DRW ([funded projects](#)).

While this knowledge is crucial to successful watershed protection, the ongoing work of the DRWI has highlighted the need to further understand dimensions of human activities surrounding watershed management. By necessity this could involve approaches drawn from a wide range of disciplines in the social and behavioral sciences, such as organizational, community and stakeholder engagement

strategies, but could also include research related to public policy, communications, business and economics, or law and social justice.

For this reason, the current round of funding will not limit the disciplines from which proposals can be submitted. The applicant should demonstrate how their project would improve understanding and guide actions related to human dimensions of watershed resource protection, with preference given to those proposals that connect directly to watershed ecological research and/or evaluation, either by collaborating with someone already funded or bringing in a partner who does monitoring and/or research. We invite applicants to use the proposal as an opportunity to explore novel research ideas, interdisciplinary strategies, and productive partnerships. The following are examples of topics that might meet this criterion and are provided **for illustrative purposes only**:

- **Examine patterns of social behavior relative to water protection strategies, including immediate effects and long term sustainability.**
- **Test communications strategies for engaging various demographic groups in watershed conservation.**
- **Examine organizational dynamics of integrating grassroots organizations with scientific expertise.**
- **Empirical studies of conflict resolution in network with varied agendas.**
- **Comparative studies of long term viability of stakeholder-driven watershed protection programs.**
 - o **Developing strategies and funding streams for integrating community-based watershed protection with municipal and regional government.**
 - o **Models for long term funding regimes (multiple source) of watershed management activities.**
- **Use of adaptive management as a planning paradigm for watershed protection programs.**
- **Evaluate technical, economic, social and/or public policy opportunities and constraints for updating major wastewater treatment infrastructure to address 21st century needs.**
- **Review of natural resources management strategies affecting watershed ecology and analyses of applicability in the DRB.**

Proposal Guidelines

Qualifications and Restrictions

- A total of \$1,000,000 in 2 to 4 grants will be awarded in 2017.
 - This phase of the DRWF funding is intended to produce near-term results that will be applicable to both the DRWI and other similar projects. Therefore, preference will be given to proposals designed to be completed in 1 -2 years. However, a properly justified longer study might be considered.
- Researchers from academic institutions, non-profit organizations and public agencies are invited to apply for funding.
 - Applicants should have capacity to complete the work proposed as demonstrated by institutional history, CV, and professional recommendations and support letters.
 - Applicants' institutional affiliation must allow use of external funds.
 - Funds from the DWRF are not available to researchers primarily affiliated with the Academy of Natural Sciences or Drexel University. Please see

the FAQ document for details about the use of Drexel Watershed Consortium funding in conjunction with a DWRF sub-award.

- The research should either take place within or be directly transferable to the conditions within the Delaware River Basin.
- Collaboration, securing matching funds, and leveraging larger funds are strongly encouraged, but are not required, to submit a proposal.
- The allowable rate of indirect costs will be 15%.
- Equipment purchases (over \$500) with DRWF funding are limited to equipment directly related to the funded project.
- Funded proposals must provide proof of the lead institution's insurance certifications and the most recent institutional audit prior to entering into the sub-award agreement.

Deliverables and Special Requirements

- Participants will demonstrate completion of research objectives in a final report to be presented within one year of completion of grant period.
- At least one peer-reviewed publication related to the research will be submitted within one year of the end of the grant period.
- Participation in discourse surrounding the DRWI as demonstrated through annual participation in the DRWI-sponsored watershed research conference, commencing in **November 2017** and continuing throughout the grant period.
- Participants will contribute data collected through the grant to the DRWI publicly-available database, after it is processed. Data will not be made publicly-available prior to publication of results.

Senior Advisory Group and Peer Reviewers

- A selected group of external authorities in fields related to natural resource management research and its application will act as the Senior Advisory Group for this fund. They will provide expert advice on the selection process and in the final review of proposals.
- Peer reviewers will be selected from specific disciplines by senior ANS staff and the Senior Advisory Group based on the content of proposals received. Peer reviewers will score and provide recommendations based on the feasibility and other merits of proposed projects.

Application and Selection Process

A. Letter of Intent Outline (Three-Page Limit)

Letters of Intent will be submitted to anspgrants@drexel.edu by **June 23rd, 2017**.

- **Cover page** (one page)
Principle Investigator (PI) name, organization information, PI title, (credentials/CV – 2 pages to be appended to Letter of Intent), abstract (one paragraph summary of project, one page total)
- **Project description** (two pages)
 - Outline of project, including **key elements*** listed below

- Budget estimation (including indirect costs, etc. categorized in short form)

***Key elements of Letter of Intent**

- **Statement of project**
 - Goals/Objectives
 - Central research question(s)
 - Summary - scope of work/methodology
- **Relation to DRWI**
 - Proposals outside the Delaware River Watershed must display high disciplinary merit and address a critical watershed resource management issue that is directly transferable to the Delaware Basin. They should include a description of the geographic region proposed.
- **Broader impact**, such as formal or informal education opportunities, community outreach and/or engagement, work with DRWI practitioners, etc.
- **Documentation that demonstrates history of, or capacity to accomplish, work/research similar to what is proposed**

Letters of intent will be evaluated using the following criteria, in addition to completeness (all materials submitted):

- Demonstrates capacity of applicant to complete project within the proposed time and funding limits.
- Incorporates effective collaborations, methods or techniques that are either well understood and trusted or present an innovative approach that builds upon similar work.
- Clearly summarizes the relevance of the research questions in relation to the goals of the Delaware River Watershed Initiative.

B. Full Proposal Outline

Upon invitation to submit a full proposal for funding, proposals will be submitted within the online Drexel ORA proposal software by August 25th, 2017, with the following information, as specified. Details on utilizing the online proposal software will be provided with invitations for full proposal.

- **Cover page**
PI name(s), info (title, additional credentials, contact information), key staff, abstract (one paragraph summary of project), total project cost (requested and match, if applicable)
- **Budget and budget summary justification**, as specified in the online proposal
- **Narrative (maximum of ten pages)**
 - Central research question(s)
 - Goals/objectives, as related to PI's discipline and to the DRWI
 - Methodology, summarized scope of work (research approach)
 - Broader impacts relative to PI's discipline and DRWI

This section should include a credible argument that this research will support and/or guide real-world outcomes relevant to the larger watershed conservation and water quality goals of the DRWI

- **Milestones or benchmarks, including project timeline**
- **Attached documentation**
 - Qualifications and CV (short form) for PI and key personnel
 - Letters of Support
 - Organizational Structure for Project
 - Documentation of Institutional Status

Proposals will be evaluated using the following criteria in addition to completeness (all materials submitted):

- All points noted for the Letter of Intent.
- Clear definition of the importance of this research to understanding the Delaware River Watershed in ecological-socioeconomic relations and functioning, with preference given to projects utilizing connection to ecological work.
- Clear explanation of the logic model and hypotheses of the research question(s) and their relationship to the Delaware River Watershed and/or the DRW Initiative.
- Connection/suggestions for larger actions to improve the understanding, integrity or investment in the Delaware River Watershed and/or evidence of other expected broader impacts.

C. Selection Process

- Please contact anspgrants@drexel.edu with any questions, or to sign up for the information webinar, which will be held on Friday, June 9th at 11am, and available by Monday, June 12th on the fund [website](#).
- Letters of intent are due to anspgrants@drexel.edu by **June 23rd, 2017**. They will be reviewed by senior Academy of Natural Sciences staff and the Senior Advisory Group of the fund, and invitations for full proposals will be extended by **July 21st, 2017**, upon which the selected applicants will be invited to Drexel University's Funding Portal (InfoReady) to submit the full proposal. Full proposals will be due via DU's Funding Portal on **August 25th, 2017**. Proposals will undergo an anonymous peer-review via online software by external experts within the relevant disciplines and scored by consensus of the reviewers. Recommendations from peer-review will be assessed by senior ANS staff and the Senior Advisory Group of the Fund and final selections made by senior ANS staff by **October 20th, 2017**.

Appendix – Organizational Background

Description of Academy of Natural Sciences

The Academy of Natural Sciences was founded in Philadelphia in 1812, coining it as one of the oldest natural science institution and museum in the Americas. From the beginning, the mission has been the cultivation and encouragement of the sciences, with the goals of improving the understanding of

diversity, ecology and evolution of life; developing and applying science to protect the environment; advancing public interest and engagement in natural sciences and environmental issues; and preserving science in specimens, images, words, and numbers. ANS has four groups to accomplish these goals: the public museum, education and outreach, The Center for Systematic Biology and Evolution, and the Patrick Center for Environmental Research (PCER). PCER was founded by Dr. Ruth Patrick in 1947, with a devotion to the health of watersheds and an expertise in biogeochemistry, ecological studies, watershed and wetland ecology, ecological modelling and statistical ecology. In 2011, ANS formed an affiliation with Drexel University, which is grounded in applied research, and thrives at the intersection of science and practice. This strong history of scientific commitment and experience made the Patrick Center for Environmental Research within the Academy of Natural Sciences the natural choice to lead the aquatic science involved in the Delaware River Watershed Initiative.

Description of Delaware River Watershed Initiative

The Delaware River Watershed, which encompasses over 13,500 square miles in Delaware, New Jersey, New York and Pennsylvania, is a complex, ecologically diverse natural system enveloping the longest undammed river east of the Mississippi. It includes many clean headwater streams that originate in large, unbroken forest, extensive tidal wetlands and hemispherically significant habitat for plants and animals, including rare and endangered species. However, at the same time, 15 million people—more than 5% of the US population—obtains drinking water from this river basin, including residents of New York City, Trenton, Philadelphia, and Wilmington. Eight million people, live and work within the Basin itself, relying on clean water for industry and development, as well as for recreation and environmental health. While the Delaware River has made clear progress in its condition in the past century largely as a result of the 1972 Clean Water Act, there is still significant work to be done to protect the vitality of this watershed in quantity and quality. There are also continued stressors that are more difficult to regulate, mitigate and adapt to, such as continued population growth, land development expansion at the expense of forest, continued agricultural use, intensive energy development with associated infrastructure, water withdrawals, and legacy point / non-point contamination. However, action is pivotal to the continued human reliance on the Delaware Basin system. The health of the region therefore requires that stakeholders—watershed groups, land trusts, funders, scientists (including hydrologists, engineers, chemists, and ecologists), land-use planners, water utilities, regulatory agencies—work together to devise holistic approaches, monitor progress, and make the most of every investment.

As a result of innovation within conservation—such as mapping/modeling and rigorous water quality monitoring processes—land trusts, watershed associations and public agencies have the resources to strategically target and measure protection and restoration in ways that were not possible a few decades ago. The Delaware River Watershed Initiative (DRWI) represents an opportunity to stimulate even more significant work by these strong organizations, strategically aligning the conservation efforts of multiple high-capacity organizations in places where there are both significant threats and opportunities for success, which will accelerate comprehensive protection and restoration of water quality in the Delaware River Basin at an unprecedented scale. Under the umbrella of the DRWI, there are currently more than 50 leading conservation organizations in aligned, prioritized efforts in over 300 locations to restore degraded areas, protect important landscapes, encourage innovations in green infrastructure and finance, and quantify the resulting scientific impact of the work, with standardized protocols for high-quality data acquisition and access. These organizations are targeting their work within eight sub-watershed “clusters,” which constitute approximately 25% of the Delaware River Watershed and were chosen for their ecological significance and unique representations of the key

stressors in the Basin: loss of forested headwaters, agricultural runoff, polluted stormwater, and aquifer depletion. Each cluster acts as a “living laboratory” that tests, refines and measures the impacts of intervention techniques over time.