



Environment and Natural Resources Trust Fund

2022 Request for Proposal

General Information

Proposal ID: 2022-085

Proposal Title: Supporting Community-based Water Conservation Through Public Engagement

Project Manager Information

Name: Seth Thompson

Organization: U of MN - College of Biological Sciences

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Project Basic Information

Project Summary: To cultivate community-based water conservation, we will host a series of events focused on facilitating conversation about environmental sustainability and water conservation, specifically integrating western science and Indigenous perspective.

Funds Requested: \$125,000

Proposed Project Completion: June 30 2024

LCCMR Funding Category: Small Projects (H)

Secondary Category: Environmental Education (C)

Project Location

What is the best scale for describing where your work will take place?

Statewide

What is the best scale to describe the area impacted by your work?

Statewide

When will the work impact occur?

During the Project

Narrative

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

Water is a fundamental resource for supporting life and plays a significant role in the lives of Minnesota Native American Communities. In fact, as the land of 10,000 lakes, maintaining clean water is a central part of the culture for all Minnesotans. However, the negative impacts of humans on Minnesota's aquatic systems continues to grow with over 5,700 of the state's water bodies being listed as impaired by the Minnesota Pollution Control Agency in 2020. This included the addition of 725 new water bodies between 2018 and 2020, signifying that Minnesota continues to have major challenges in protecting our freshwater. Ultimately, protecting Minnesota's water will require not only new scientific developments but also commitment from Minnesotans to take action and an examination of the fundamental relationship between humans and our environment. Indigenous communities across Minnesota have a long history of engagement with environmental conservation and sustainability, yet much of the science that traditionally informs Minnesota's approach to water conservation does not include Indigenous knowledge and perspectives. To work towards an action-based water conservation ethic throughout Minnesota's communities a more holistic understanding of environmental sustainability that draws on both traditional Indigenous knowledge and western scientific approach is needed.

What is your proposed solution to the problem or opportunity discussed above? i.e. What are you seeking funding to do? You will be asked to expand on this in Activities and Milestones.

We will use community-based events to cultivate meaningful avenues for engagement across diverse communities, particularly emphasizing the integration of different knowledge bases into a shared understanding of environmental issues relevant to Minnesotans. We will create a series of public engagement workshops to educate community members around important issues of water, such as agricultural water demands, invasive species, and eutrophication. These workshops will incorporate field-based experiences and explicit instruction on the integration of Indigenous knowledge into a holistic and relational understanding of environmental sustainability. Participants will consider the environmental impacts of human behaviors from multiple perspectives and grapple with the complexities of our relationship to natural ecosystems. By providing education focused on protecting Minnesota's water, we aim to help cultivate a community that cares about the natural world and has the tools to protect it. At the conclusion of the public engagement sessions, we will develop a short toolkit that describes the key tenets of the workshops, examples of implementation, and an overview of the conversations and discussions of participants. This work will enhance the scientific literacy and environmental ethos of our communities, and build meaningful relationships with marginalized communities across Minnesota to engage in conversations about environmental conservation.

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state's natural resources?

Achieving a future of sustainability for water resources requires committed community actions. Realizing this collective action depends on communities dedicated to environmental stewardship and possess a strong environmental ethos. This proposal will facilitate this through workshops that highlight Indigenous perspectives on environmental sustainability in communities throughout the state. The concluding toolkit will serve as a guide for community members and educators to continue having engaged conversations. In total, we expect this project to directly engage ~500 Minnesotans each project year, with a cascading effect of building public environmental literacy as well as support ongoing dialogue on environmental sustainability across Minnesota.

Activities and Milestones

Activity 1: Development of Public Engagement Workshops

Activity Budget: \$100,000

Activity Description:

The proposed public engagement workshops will use a combination of hands-on outdoor education with community-centered dialogue to cultivate a strong commitment to environmental stewardship. We aim to build out workshops covering six topics that are of critical importance to Minnesota's water resources: invasive species, climate change, urbanization, agriculture, industrial impacts, and water scarcity. For each topic, we will explore the most recent research from the scientific literature, examine the local Indigenous funds of knowledge, and explicitly integrate across these two perspectives to form a more complete understanding on the current state of knowledge. With this dialogue as a base, we will build hands-on activities that will bring participants outdoors to learn about the ways we can study and learn from our environment. For example, in the urbanization workshop the project team could lead a demonstration on how different surface types (such as barren soil vs paved surfaces) impact water movement across the surface, discussing how this impacts water quality. Each workshop will then conclude with a community meal that creates space for continued informal conversations between program participants to further develop a shared understanding of effective strategies for protecting Minnesota's water.

Activity Milestones:

Description	Completion Date
Co-develop material for first 3 workshops with community leaders	December 31 2022
Complete first set of 12 workshops	July 31 2023
Co-develop material for final 3 workshops with community leaders	July 31 2023
Complete second set of 12 workshops	June 30 2024

Activity 2: Development of the Facilitators Toolkit

Activity Budget: \$25,000

Activity Description:

The facilitators' toolkit will aim to fulfill two objectives, 1) serve as a guide for community members and educators to continue having engaged conversations, and 2) serve as a springboard for further curriculum development around bridging Indigenous and Western perspectives in water resource management and conservation. To facilitate the first objective, we will document and compile our approach to workshop development, incorporate key questions addressed during the sessions, highlight salient aspects of our conversations, and pose potential new discussion strands. To facilitate the second objective, we will add framing of the salient conversations that describes the similarities, differences, and convergences of Indigenous and Western perspectives. This framing will be grounded in relevant literature as well as our own qualitative analysis of conversation transcripts from each workshop. To construct the toolkit, we will conduct community listening sessions with local and Tribal leaders, who will also be consulted to review and provide feedback once a draft is completed. Lastly, we will pilot and revise the toolkit as needed.

Activity Milestones:

Description	Completion Date
Perform feedback sessions with community leaders to inform toolkit design	July 31 2023
Complete initial version of facilitator toolkit for community leaders	January 31 2024
Pilot test and revise facilitator toolkits with community leaders	June 30 2024

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
James Cotner	University of Minnesota	Co-PI; Cotner will be responsible for managing the scientific merit of the program and the alignment of outreach programming to most recent research in limnology and water conversation. Cotner will provide scientific mentorship and supervision for the summer graduate student	Yes
Hillary Barron	University of Minnesota	Co-PI; Barron will be responsible for facilitating partnerships with tribal colleges and community partners. She will also provide expertise in cultural responsiveness and educational best practices for the project	Yes

Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this be funded?

To sustain impact after the project period, we will pursue two distinct strategies: capacity building within community leaders and integration of the workshop content into existing seminar/speakers series within the College of Biological Sciences. To build capacity locally, we will spend the second half of the project period developing a facilitator's toolkit that will allow community leaders to implement additional workshops post granting period. In addition, the project leaders will work within their own departments to offer special seminars featuring Indigenous knowledge integration through existing public seminar and engagement programs, providing institutional support to sustain our impact.

Project Manager and Organization Qualifications

Project Manager Name: Seth Thompson

Job Title: Director of Outreach

Provide description of the project manager's qualifications to manage the proposed project.

Seth K. Thompson is the Director of Outreach for the College of Biological Sciences at the University of Minnesota and Co-Director of the College's Impact Exchange. He brings over a decade of experience in implementing public engagement and outreach programs to our team. Currently, he oversees the College's outreach programs, including the InSciEd Out Program Twin Cities hub, Market Science, and the SciSpark Scholars mentorship program. He has worked with the InSciEd Out program for over 5 years, developing programming from the ground up that now serve over 3,000 students annually in the Twin Cities with a focus on communities underrepresented in science. He has extensive experience working with K-12 teachers, having provided professional development programming for over 75 teacher partners and maintains strong connections with K-12 teachers and administrators across the Twin Cities. Under his leadership, the Market Science program hosted over 60 community events last year resulting in over 9,000 interactions with Minnesotans. Additionally, he has expertise in STEM education research and multiple publications relating to inquiry-based science education and STEM equity. He has mentored over 20 undergraduate researchers and several graduate students. His role in the proposed project is to oversee all programming by working with potential district partners, recruiting new teacher partners, supervising student staff (both graduate and undergraduate) and managing the budget and administrative tasks of the proposed project. Details on his current projects and a list of publications can be found on his website (<http://thom2587.wixsite.com/sciencewithimpact>).

Organization: U of MN - College of Biological Sciences

Organization Description:

The College of Biological Sciences encompasses the full breadth and depth of biology with departments and graduate programs spanning the discipline. In 2019, CBS enrolled 2,235 undergraduates and 279 graduate students and had 152

faculty. CBS research and programming were supported by over 2,000 active grants totaling over \$28 million in external funding, including awards from the National Institutes of Health, the National Science Foundation, and the U.S. Department of Agriculture, among others.

Earlier this year, the College launched the Impact Exchange to provide centralized support and vision for the College's outreach programs and foster a more holistic approach to community engagement. The Impact Exchange will serve as a multidisciplinary hub for innovation and training, leveraging the talents found across the University of Minnesota system to bring together experts in communication, design, and science to offer innovative training in science communication for members of the University of Minnesota community that will further support the community engagement and outreach mission. This newly formed "engagement ecosystem" provides the College with a centralized effort to connect with the broader community through public events and community-embedded programs.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Academic Faculty		James Cotner, PhD, Co-PI: 8% paid effort (1 calendar month) per year for all project periods. Cotner will be responsible for managing the scientific merit of the program and the alignment of outreach programming to most recent research in limnology and water conversation. Cotner will provide scientific mentorship and supervision for the summer graduate student			27%	0.16		\$34,000
PostDoc		Hillary Barron, PhD, Co-PI: 16% effort (2 calendar months) per year for all project periods. Barron will be responsible for facilitating partnerships with tribal colleges and community partners. She will also provide expertise in cultural responsiveness and educational best practices for the project.			20.3%	0.32		\$21,000
Graduate Student (summer)		Graduate Student (summer), TBD: 50% summer support for all project periods. The graduate student will collaborate with the Co-PIs to offer the summer workshop series and support the overall management of the proposed programming.			16.6%	1		\$16,000
							Sub Total	\$71,000
Contracts and Services								
							Sub Total	-
Equipment, Tools, and Supplies								
	Tools and Supplies	\$500 per event (for a total of 6,000 per year) for advertising materials, office supplies, and other event related materials. This budget would also cover (or subsidize the cost of) of food for the community meal at each event.	Operational/Event Supplies					\$12,000
	Tools and Supplies	\$3,000 per year to support consumable supplies for the community engagement events budgeted at	Field/Lab Supplies					\$6,000

		\$250 per event for 12 events. These will include lab reagents, water quality sampling supplies, filters, etc.						
							Sub Total	\$18,000
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	We also request \$6,000 per year to support lodging and meals for a 2-person team (made up of project personnel) to travel to our out state event locations (12 per project year) to facilitate the community engagement events. Those costs are broken down as follows (per person, per event): • Lodging 1 night @ \$95 • Per Diem for 2 travel days @ \$55 • Mileage 56 centers per mile ~175 miles round trip -> ~\$100 • Total cost = \$95+55+100*2 travelers* 12 events per year = \$6,000 per year	Travel to Events					\$12,000
							Sub Total	\$12,000
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
							Sub Total	-
Other Expenses								

		Participant Support	We request funds to pay a stipend of \$500 for a community member to join the event facilitation team for each of the 12 events. These community representatives will be vital for sharing the perspectives of the local community and engaging in a reciprocal partnership.					\$12,000
		Short Term Lease	Short term rentals for event space. We estimate \$500 per event to cover event rental space.					\$12,000
							Sub Total	\$24,000
							Grand Total	\$125,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
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Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
In-Kind	Indirect costs associated with this proposal at 35% MTDC.	Indirect costs cover both facilities costs and administrative costs that are incurred by the University of Minnesota when conducting sponsored research, instruction, and public service projects.	Potential	\$39,353
			State Sub Total	\$39,353
Non-State				
			Non State Sub Total	-
			Funds Total	\$39,353

Attachments

Required Attachments

Visual Component

File: [8182ea0c-961.pdf](#)

Alternate Text for Visual Component

Implementation plan for the proposed project....

Administrative Use

Does your project include restoration or acquisition of land rights?

No

Does your project have potential for royalties, copyrights, patents, or sale of products and assets?

No

Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?

N/A

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?

N/A

Does your project include original, hypothesis-driven research?

No

Does the organization have a fiscal agent for this project?

Yes, Sponsored Projects Administration



