



Environment and Natural Resources Trust Fund

2021 Request for Proposal

General Information

Proposal ID: 2021-219

Proposal Title: Promoting Environmental Conservation Through Storytelling

Project Manager Information

Name: Seth Thompson

Organization: U of MN - College of Biological Sciences

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Project Basic Information

Project Summary: This project will provide intensive science communication training for students at the University of Minnesota and leverage the power of storytelling to promote environmental conservation throughout the state.

Funds Requested: \$392,000

Proposed Project Completion: 2023-06-30

LCCMR Funding 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 and In the Future

Narrative

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

Science touches every aspect of our lives, yet our public discourse is hampered by mistrust and unequal access to science education and knowledge. A growing body of research demonstrates the value of story and storytelling in changing attitudes toward science at the individual and community level. Impacts range from improving receptivity to new knowledge and opposing viewpoints, to promoting a more expansive view of science identity and pathways to STEM careers.

The goal of this proposal is to develop science communication programming that build upon goals identified in the 2017, Communicating Science Effectively: A Research Agenda :

- Increase appreciation for science as a way of understanding and navigating the modern world.
- Engage with diverse groups so that their perspectives about science can be considered in seeking solutions to societal problems that affect everyone.
- Use science communication and storytelling to reach citizens whose perspectives vary by race, geography, ethnicity, language status, income, and education level and that may respond differently to science as a result of differences in their norms, beliefs, or experiences.

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.

Our proposal builds upon the work of the UMN Science Communication Lab (Lab), a successful interdisciplinary training program for student writers, scientists, and designers interested in science communication.

Students in the Lab interact with graduate students, postdocs, and research scientists around complex topics from environmental remediation to conservation ecology. They grapple with the underlying science and develop strategies for making science content engaging, accessible, and relevant to the general public. Lab projects include infographics, social media campaigns, animation exhibits, live events, and educational programming (a children's book on White Nose Syndrome in Bats based on LCCM-funded research, a traveling exhibit on the use of Microbes for environmental remediation).

Students across disciplines display increased interest in science and public engagement, greater confidence interacting with scientists and the public, and improved ability to connect evidence-based research to societal issues.

One of the most effective methods for training students to engage with the general public is live storytelling. This proposal seeks to build upon the Lab's existing program to train a new, larger group of early-career scientists to share personal stories related to environmental and conservation science and to create ongoing opportunities to share those stories with audiences across the state.

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 environmental sustainability that preserves and enhances our natural resources requires committed community actions. To realize this collective action, we need communities that are dedicated to environmental stewardship and possess a strong environmental ethos. This proposal will facilitate that community development by leveraging the power of storytelling to engage Minnesotans with the cutting edge of environmental and conservation science. In total, this project will result in science communication training for 4 undergraduate students and 20 graduate students as well as provide educational opportunities for tens of thousands of Minnesotans through museum education programs and public storytelling events.

Activities and Milestones

Activity 1: Science Communication and Storytelling Training for Graduate Students

Activity Budget: \$120,000

Activity Description:

Based on the Science Communication Lab’s 3-credit Surveying the Field: Science Communication and Public Engagement, we will provide intensive training to a cohort of 20 graduate students and four undergraduates in the fall semester, followed by a semi-weekly workshop series on storytelling and public engagement during the spring semester. Surveying the Field is designed to help early career scientists develop communication skill and practice engaging diverse audiences with science. Students analyze effective communication strategies and explore challenges and opportunities for researchers seeking to engage with the public in formal and informal settings. Students also learn to apply these skills in professional settings, where clear, compelling communication is increasingly important for career advancement. The class builds towards a final project, where students write, practice, and perform stories. By emphasizing the human dimension, young scientists learn to move beyond the scientist-as-expert model of communication to engage the public in a conversation where evidence-based research plays a role in addressing issues we face together. In the spring students will attend semi-weekly storytelling seminars and develop communication strategies for use in museum settings and prepare for participation in community storytelling events (Activities 2 & 3, below).

Activity Milestones:

Description	Completion Date
Offer Science Communication Course	2021-09-30
Offer Storytelling Workshop Series	2022-01-31
2nd iteration of Science Communication Course	2022-09-30
2nd iteration of Storytelling Workshop Series	2023-01-31

Activity 2: Applied Summer Experiences Through Museum Partnerships

Activity Budget: \$240,000

Activity Description:

Following the communication and storytelling training programs, students would apply for one of the proposed embedded summer experiences to put their training into practice in informal educational settings. By cultivating partnerships between the Impact Exchange, the Bell Museum, Bakken Museum, and Science Museum of Minnesota, we will provide opportunities for early career scientist to practice their communication skills in an informal education setting in some of the most highly visit museum spaces in the state. These experiences would support 20 hours per week of commitment for the summer and support existing programming at the museum partners. For example, these students might co-develop content for museum gallery exhibits or take a leadership role in preparing interactive activities for K-12 audiences, contributing scientific expertise in natural resource and environmental science. Experiences will focus on integrating elements of storytelling into the museum exhibits or gallery carts and assessing the impact of this exhibit design structure on the effectiveness in promoting increased sense of environmental connectedness among museum attendees. Through these embedded experiences, students will have an chance to put their learning into practice and support informal educational opportunities for tens of thousands of Minnesotans each year as part of the museum programming.

Activity Milestones:

Description	Completion Date
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Open application for summer experience to all communication training participants	2022-03-31
Select 1st cohort of summer students	2022-05-31
Focus group with 1st intern cohort to inform future iterations of experiences	2022-09-30
Recruit 2nd cohort of summer students	2023-05-31

Activity 3: Storytelling Events to Build Environmentally Conscious Communities

Activity Budget: \$32,000

Activity Description:

Achieving environmental sustainability will require massive collective action by communities across our state. Supporting this type of collective action on the scale that is necessary to protect and preserve our natural resources will require innovate methods for community building and communicating cutting-edge advances in conservation science. Decades of efforts focused on communicating the scientific underpinnings of the most pressing environmental issues have taught us that data alone is often insufficient for driving behavioral change. Here, we propose to use storytelling as a way for scientists to connected with communities on a more human way, ultimately delivering a more impactful message about the need for protection of our states natural resources as well as communicating the most recent scientific research that can inform management policies and personal decisions. We will achieve this objective by hosting conservation focused storytelling events in communities across the state, with a particular emphasis on locations outside of the Twin Cities metropolitan area. We propose hosting 6 events in year one of the grant followed by 10 additional events in the second year of funding. Based on attendance at other public events hosted by the Impact Exchange, we expect these to reach between 800-1200 Minnesotans.

Activity Milestones:

Description	Completion Date
Pilot first storytelling event in the Twin Cities Metro	2021-09-30
Pilot event in Greater Minnesota (potentially near Itasca State Park)	2021-11-30
Host 4 additional storytelling events across the state	2022-06-30
Review audience feedback forms from initial events to revise structure as needed	2022-08-31
Start monthly event series in rotating locations across the state	2022-09-30
Complete a total of 16 storytelling events.	2023-06-30

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Suzanne McGaugh	College of Biological Sciences	Dr. McGaugh is an Assistant Professor in the department of Ecology, Evolution, and Behavior. She will help recruit graduate students to participate in the proposed programming as well as help facilitate connections between the Project Manager and other potential faculty partners.	No
Sharon Jansa	College of Biological Sciences	Dr. Jansa is a Professor in the Department of Ecology, Evolution, and Behavior, Director of Graduate Admissions, and Curator of Mammals for the Bell Museum. She will help recruit graduate students to participate and in the proposed programming and facilitate connections between the Project Manager and other faculty.	No
Michael Winikoff	BioTechnology Institute - University of Minnesota	Michael Winikoff is the Director of the Science Communication Lab and Co-Director of the CBS Impact Exchange. He will support the science communication training and storytelling workshops through the Impact Exchange and provide mentorship for the Science Communication Lab Manager.	No
Stephanie Xenos	College of Biological Science	Stephanie Xenos is the Director of Marketing, Communications and External Relations for the College of Biological Sciences and Co-Director of the CBS Impact Exchange. She will support the science communication training and storytelling workshops through the Impact Exchange.	No
Holly Menninger	Bell Museum	Dr. Menninger is the Director of Public Engagement and Science Learning at the Bell Museum and Co-PI on this proposal. She will facilitate the involvement of the Bell Museum in the embedded summer programming for students.	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?

Implementation of our project will be facilitated through the College of Biological Science's Impact Exchange. We will sustain the science communication training as credit-based courses for undergraduate and graduate students. To address the ongoing cost associated with summer experiences and storytelling events, we will partner with faculty members and our museum partners to include reoccurring support in subsequent federal and state research grants. Finally, CBS has received robust philanthropic support in the past and we will continue to cultivate relationships with both private donors and local corporations and foundations to seek out additional funds to support our work.

Project Manager and Organization Qualifications

Project Manager Name: Seth Thompson

Job Title: Outreach Programs Manager

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

Seth K. Thompson is the Outreach Program Manager 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 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. 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.

The Bell Museum is Minnesota's official natural history museum, established by the legislature in 1872 and held in trust by the University of Minnesota. For over a century, the museum has preserved and interpreted our state's rich natural history and served learners of all ages. Additionally, our scientific collections contain over one million specimens, representing every county in Minnesota and various locales around the globe. As Minnesota's state natural history museum, the Bell Museum's mission is to ignite curiosity and wonder, explore our connections to nature and the universe, and create a better future for our evolving world. In 2018-2019, the Bell Museum we saw over 230,000 visitors from all 87 counties.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Academic Staff - Bell Museum Partner		This person will supervise and mentor grad students in public engagement activities during the summer embedded programs. This person will work 16 weeks at 6 hours per week (0.15 FTE for 4 months)			26.7%	0.1		\$9,698
Academic Staff- Science Communication Lab Manager		This position will provide instructional support for the academic year training as well as programmatic support for the summer programming. The Science Communication Lab Manager will be responsible for programmatic implementation and will receive supervision from the Project Manager and collaborators.			26.7%	2		\$133,006
Graduate students (summer)		50% FTE for 10 graduate students each summer. Graduate students receiving summer support will participate in applied science communication projects including delivering programming with science museum partners.			16.6%	100		\$170,380
Undergraduate students (academic)		Assuming a pay rate of 12.50 per hour for undergraduate students, we request support for 2 students each academic year working 10 hours per week.			0%	38.4		\$20,000
Undergraduate students (summer)		Assuming a pay rate of 12.50 per hour for undergraduate students, we request support for 2 students each academic year working 40 hours per week.			0%	46		\$24,000
							Sub Total	\$357,084
Contracts and Services								
							Sub Total	-
Equipment, Tools, and Supplies								

	Tools and Supplies	Operational Supplies	We request \$500 in operational supplies for each storytelling event, with 6 events planned in year 1 and 10 events planned in year two. This budget will help offset the cost of event promotional materials and light refreshments during events.	X					\$8,000
	Tools and Supplies	Lab/Field Supplies	Lab/Field supplies will be used to the development of gallery carts and exhibit materials during embedded experiences with our museum partners. We have allocated \$500 dollars for supplies for each gallery cart and proposed the creation of 3 carts in year 1 and 4 carts in year 2.						\$3,500
								Sub Total	\$11,500
Capital Expenditures									
								Sub Total	-
Acquisitions and Stewardship									
								Sub Total	-
Travel In Minnesota									
	Miles/ Meals/ Lodging	Lodging and mileage for storytelling events across the state. These costs would support 16 total events (6 in year 1 and 10 in year 2). Costs cost broken down as follows: • Overnight lodging -> \$300 per event for 3 participants (\$100 per participant/ per diem rate dependent on specific location) • Mileage reimbursement -> 0.575 cents per mile based on an average expected round-trip between 200-300 miles.	Storytelling events						\$7,416
								Sub Total	\$7,416
Travel Outside Minnesota									

							Sub Total	-
Printing and Publication								
							Sub Total	-
Other Expenses								
		Short term rents/leases - We request funds to support space rental for hosting the storytelling events. We have budgeted for \$1,000 for venue rental per event for a total of 16 events (6 in year 1 and 10 in year 2).	Venue rental for storytelling events	X				\$16,000
							Sub Total	\$16,000
							Grand Total	\$392,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
Equipment, Tools, and Supplies		Operational Supplies	We are requesting this support even though these costs are typically not funded by the LCCMR because we believe that providing some food and some advertising will be needed to establish these events within our partnering communities. Once we've established a presence in the communities, we would anticipate charging a small ticket fee for events to cover these costs in the future.
Other Expenses		Short term rents/leases - We request funds to support space rental for hosting the storytelling events. We have budgeted for \$1,000 for venue rental per event for a total of 16 events (6 in year 1 and 10 in year 2).	We request funds to support space rental for hosting the storytelling events across the state.

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	\$137,000
			State Sub Total	\$137,000
Non-State				
			Non State Sub Total	-
			Funds Total	\$137,000

Attachments

Required Attachments

Visual Component

File: [29b71331-004.pdf](#)

Alternate Text for Visual Component

Diagram showing the progression of students through the science communication training program into community-embedded experiences for putting their training into practice.

Optional Attachments

Support Letter or Other

Title	File
Authorization to Submit	28a7331d-2b2.pdf
UMN Financial Audit	44c8fd4e-c0a.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

No

Does your project have patent, royalties, or revenue potential?

No

Does your project include research?

No

Does the organization have a fiscal agent for this project?

Yes, Sponsored Projects Administration

Science Communications Graduate Fellows



