

**Environment and Natural Resources Trust Fund
2020 Request for Proposals (RFP)**

Project Title:

ENRTF ID: 124-C

TeachScience: Schools as STEM living laboratories

Category: C. Environmental Education

Sub-Category:

Total Project Budget: \$ 368,505

Proposed Project Time Period for the Funding Requested: June 30, 2023 (3 yrs)

Summary:

TeachScience will connect new science standards, renewable energy, and STEM opportunities through teacher training and support across the state to prepare students for the challenges and careers of the future.

Name: Kristen Poppleton

Sponsoring Organization: Climate Generation: A Will Steger Legacy

Job Title: Ms.

Department: _____

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Location:

Region: Statewide

County Name: Statewide

City / Township: St. Paul

Alternate Text for Visual:

5 Science Teacher Workshops and support focusing on Green Careers, Science Standards, Renewable Energy and Equity will lead to STEM and Environmentally skilled students.

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ TOTAL	_____ %



PROJECT TITLE: TeachScience: Schools as STEM living laboratories

I. PROJECT STATEMENT

Schools are living laboratories of learning: a place where the environment and infrastructure surrounding students can bring science and engineering practices to life. Through the TeachScience project, 300 middle school science teachers from across Minnesota (Mankato, St. Cloud, Moorhead, Ely, TC Metro), representing over 5,000 students, will receive hands-on training and ongoing support to make their schools living laboratories of learning about energy and the environment. As more schools and cities add renewable energy as an electricity source, and the need for jobs in this sector grows, there is an opportunity and need to integrate renewable energy and green jobs skills into our classrooms. Additionally, Minnesota science teachers are on the edge of a new era of science education as the first change in science standards in 10 years are adopted in summer 2019. There is a critical need to support teachers, schools, and districts throughout Minnesota as they begin the process of implementing these standards.

Through participation in TeachScience, teachers will receive resources and support to make their schools living laboratories, highlighting the renewable energy infrastructure on their school or in their community and the opportunity of green STEM careers. The new science standards offer the ideal platform to emphasize these concepts, with their focus on the practice of doing science and engineering, and the inclusion of more environmental and earth science content than in the past. During the school year, teachers will receive support through monthly virtual network meetings and 5 virtual classroom presentations on energy and environmental topics. Climate Generation has over 14 years of experience building the comfort, confidence, and competence of teachers to deliver STEM and environmental-based education in their classrooms, and a suite of curriculum resources already developed and ready to share. Our teacher network includes over 3,000 Minnesota teachers, and this project will leverage this network, our partners in the private energy and public education sector, and our expertise, to develop a new generation of Minnesota students with the STEM-based knowledge and skills for environmental leadership.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1: Develop and plan trainings and teacher support network

Description: *We will review the new Minnesota Science Standards, work with statewide partners to identify renewable energy and environmental community themes, and build relationships with 5 schools and districts in and near Mankato, St. Cloud, Moorhead, Ely, and the Twin Cities to develop and plan trainings around the state to support the 2021-2022 school year. In addition, we will plan follow up support for teachers in the form of 9 monthly virtual meetings including topics on effective teaching and equity, with the opportunity for discussion. We will also develop 5 virtual classroom presentations featuring energy and environmental topics and speakers.*

ENRTF BUDGET: \$146,750

Outcome	Completion Date
<i>1. Identify specific locations, build partnerships, promote 5 teacher trainings, recruit teachers through our CG network and partner networks</i>	<i>August 2021</i>
<i>2. Develop content, identify speakers, and revise resources for each of 5 training locations</i>	<i>August 2021</i>
<i>3. Develop plan, identify topics, coordinate speakers, for 9 teacher support network virtual meetings during the school-year.</i>	<i>August 2022</i>
<i>4. Develop plan, identify topics, coordinate speakers for 5 virtual classroom presentations reaching 5000 students during the school-year.</i>	<i>August 2022</i>



**Environment and Natural Resources Trust Fund (ENRTF)
2020 Main Proposal Template**

Activity 2: Implement trainings

Description: *We will implement 5 trainings for 300 middle school science teachers in Mankato, St. Cloud, Ely, the Twin Cities, and Moorhead. Trainings will be held Spring-Fall of 2021.*

ENRTF BUDGET: \$93,455

Outcome	Completion Date
1. Implement two-day training in Mankato for up to 100 teachers.	October 2021
2. Implement two-day training in St. Cloud for up to 100 teachers.	October 2021
3. Implement two-day training in Ely for up to 50 teachers.	October 2021
4. Implement two-day training in Twin Cities Metro for up to 150 teachers.	October 2021
5. Implement two-day training in Moorhead for up to 100 teachers.	October 2021

Activity 3: School Year Virtual Support of Teachers and Students

Description: *We will coordinate 9 monthly virtual meetings for 300 teachers and provide 5 virtual classroom presentations for 5,000 students. Meetings and presentations will be recorded for future use.*

ENRTF BUDGET: \$116,800

Outcome	Completion Date
1. Provide 9 monthly virtual meetings for teachers featuring supporting content and providing opportunity for collaboration and discussion. Reach: 300 teachers	July 2022
2. Provide and record for future use 5 virtual classroom presentations on energy and environmental topics. Reach: 5000 students	July 2022

Activity 4: Project Evaluation

Description: *Project evaluation will provide important feedback on the trainings to inform future trainings, demonstrate change in capacity to implement the new science standards throughout the year, and demonstrate change in student interest and knowledge on energy, environmental science and engineering concepts.*

ENRTF BUDGET: \$11,500

Outcome	Completion Date
1. Develop comprehensive evaluation plan including formative and summative evaluation.	June 2021
2. Develop and implement pre and post evaluation for teachers attending trainings and for full year of network support.	August 2022
3. Develop and implement pre/post evaluation for students attending virtual presentations.	June 2022
4. Develop final project report.	August 2022

III. PROJECT PARTNERS AND COLLABORATORS:

Minnesota Science Teachers Association, Minnesota Earth Science Teachers Association, Minnesota Association for Environmental Education, Department of Education: Science, Department of Commerce: Energy Division, Environmental Quality Board, IPS Solar, All Energy Solar, Apex, Clean Grid Alliance, RREAL, GPI

IV. LONG-TERM IMPLEMENTATION AND FUNDING:

Climate Generation has pioneered the development of STEM-based resources and training for over 13 years and is committed to including this as a key component of our K-12 programming. Our diverse funding base ensures the continuity of our programming.

Attachment A: Project Budget Spreadsheet
 Environment and Natural Resources Trust Fund
 M.L. 2020 Budget Spreadsheet

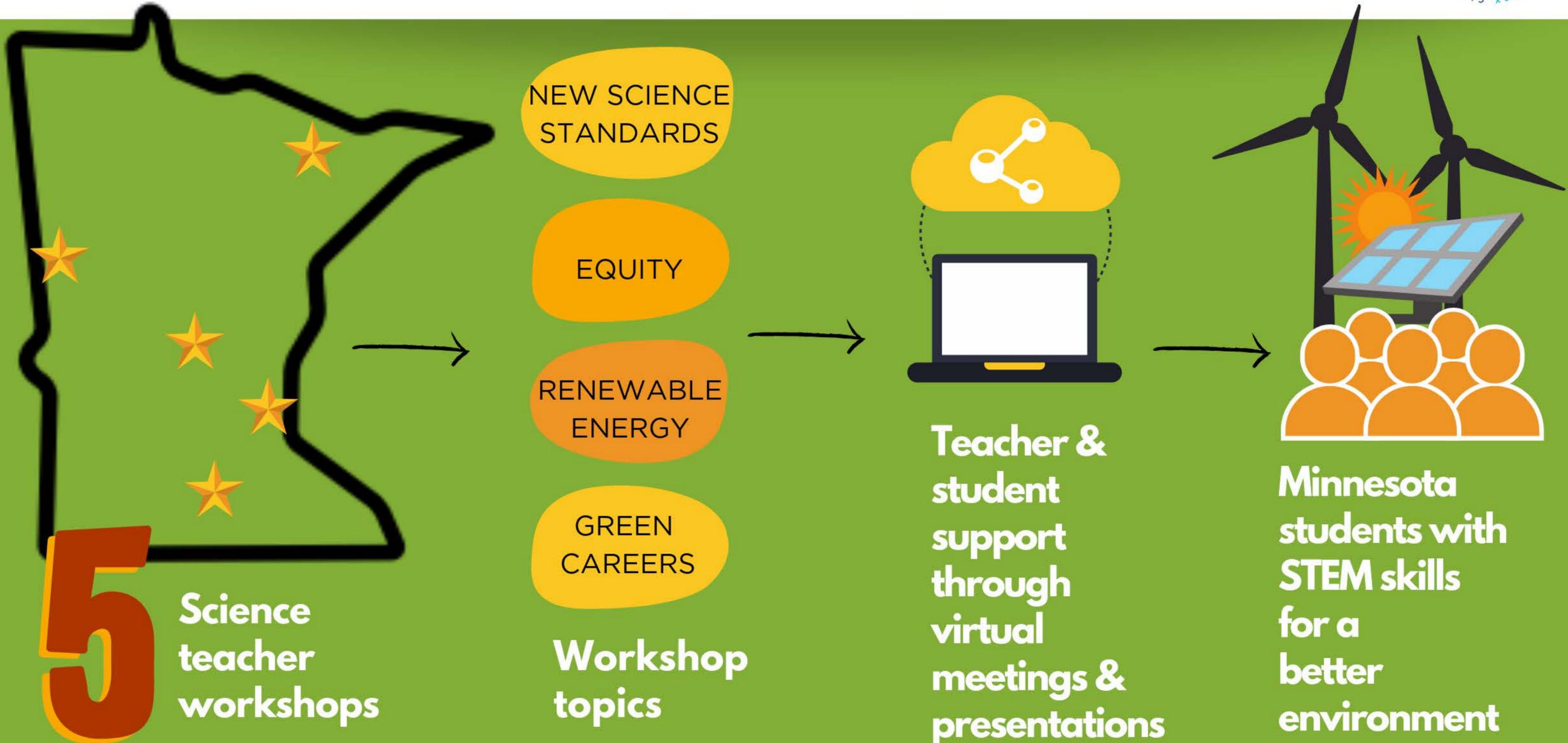


Legal Citation:
 Project Manager: Kristen Poppleton
 Project Title: TeachScience: Schools as STEM living laboratories

Organization: Climate Generation: A Will Steger Legacy
 Project Budget: \$368,505
 Project Length and Completion Date: July 1, 2020- August 30, 2022
 Today's Date: April 15 ,2019

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET		Budget	Amount Spent	Balance
BUDGET ITEM				
Personnel (Wages and Benefits)				
Director of Programs/Project Manager: Manage, oversee budget, and evaluate \$47,650 (78% Salary, 22% benefits), 25% FTE each year for 25 months		\$ 275,750	\$ -	\$ 275,750
Education Manager : Coordinate, develop, implement program \$104,840 (78% Salary, 22% benefits), 75% FTE for 25 months				
Education Coordinator: support program development and implementation \$95,310 (78% Salary, 22% benefits), 75% FTE for 25 months				
Finance Manager: Administrative and budget reporting support \$27,950 (78% Salary, 22% benefits), 5% FTE for 25 months				
Professional/Technical/Service Contracts				
Systems Administrator: Oz Technology (\$12500 = 10 hour/month \$50/hr x 25 months): technology support, webpage integration		\$ 26,500	\$ -	\$ 26,500
Program Intern (\$500/month= 12,500)				
Print Design: Bryn Bundle (\$1500)				
Equipment/Tools/Supplies				
Killawatt meter/teacher \$16*300=\$4800		\$ 23,950	\$ -	\$ 23,950
Workshop materials (markers, flipchart paper, snacks \$150/workshop) \$750				
Renewable Energy with Venier curriculum guides (\$40*125=5000)				
Solar Kits from venier (\$80*60 kits= 4800)				
Wind Kits from venier (\$120*30=3600)				
2 Micro-grids from Recharad Labs (\$2500*2=5000)				
Printing				
Workshop curriculum (\$30*300=9000)		\$ 10,500	\$ -	\$ 10,500
Outreach and dissemination materials (\$1500)				
Travel expenses in Minnesota				
5 Staff trips to communities for trainings (\$1730 hotel/meals, \$825 mileage - 1422x.58) plus travel for planning meetings (\$1000)		\$ 3,555	\$ -	\$ 3,555
Other				
Facility Rental for 5 workshop locations (\$1000/location)		\$ 28,250	\$ -	\$ 28,250
Minnesota Science Teachers Conference Exhibit and Registration for program dissemination and presentation (\$250)				
Education Minnesota Exhibit and Registration for program dissemination and presentation (\$500)				
Zoom: web based platform cost (\$1500)				
Workshop meals for participants (Breakfast/lunch for 2 days, 300 teachers: \$30/teacher/day, \$60*300=18000)				
Honorariums for speakers (\$300/speaker, 2 speakers/training*5 trainings= \$600*5=3000)				
COLUMN TOTAL		\$ 368,505	\$ -	\$ 368,505
SOURCE AND USE OF OTHER FUNDS CONTRIBUTED TO THE PROJECT				
	Status (secured or pending)	Budget	Spent	Balance
Non-State: Xcel Energy Foundation, Olseth Family Foundation				
		\$ 37,000	\$ -	\$ 37,000
State:				
		\$ -	\$ -	\$ -
In kind: Executive Director time (\$10,000 secured), Climate Generation curricula resources (\$15,000 secured)				
		\$ 25,000	\$ -	\$ 25,000
Other ENRTF APPROPRIATIONS AWARDED IN THE LAST SIX YEARS				
	Amount legally obligated but not yet spent	Budget	Spent	Balance
Educating Minnesotans about Potential Impacts of a Changing Climate: M.L. 2014, Chp. 226, Sec. 2, Subd. 09e (2014-2016)				
		\$ 325,000	\$ 325,000	\$ -

TEACHSCIENCE: SCHOOLS AS STEM LIVING LABORATORIES





PROJECT MANAGER - Kristen Poppleton, Director of Programs

Kristen Iverson Poppleton is the Director of Programs for Climate Generation: A Will Steger Legacy. Kristen develops a vision for and provides strategic coordination, budget oversight and support for all Climate Generation programs focusing on youth, policy, educator and influential engagement. She has managed two previous ENRTF projects. She served on the recently disbanded Federal Advisory Committee for the Sustained National Climate Assessment, and the City of St. Paul's Climate Action Planning Committee. She currently serves on the CLEAN (Climate Literacy) Network's Leadership Board, and Minnesota's Science Standards Revision Committee. Kristen has worked at the Science Museum of Minnesota, the International Wolf Center, and taught environmental education in Argentina. Kristen holds a BA in Biology and Hispanic Studies from St. Olaf College, a MEd in Environmental Education from University of Minnesota, Duluth and a MS in Conservation Biology from the University of Minnesota, Twin Cities.

Organization Description

Climate Generation: A Will Steger Legacy empowers individuals and their communities to engage in solutions to climate change. Based in Minneapolis, MN, Climate Generation has been a high-quality and trusted source of STEM, climate change and energy education resources and training since 2006. We deliver high-quality education, public engagement and youth leadership programming, reaching over 17,000 educators, 75,000 people, and 35,000 students since 2006.

For over 10 years we have established ourselves as a state and national leader in STEM and climate change education, and have been recognized twice by the White House Climate Education and Literacy Initiative. Our first ENRTF funded project, Minnesota's Changing Climate received an award from Environmental Initiative in recognition of the partnerships developed and utilized. More than 10,000 individuals have downloaded our original, standards-based curriculum from our suite of six, reaching over 75,000 students. In addition, we have provided over 1,500 educators from 30 states with in-depth training on how to integrate climate change in the classroom. Our long-term, sustained approach is unique: we strive to provide teachers with multiple opportunities to build on their understanding of climate change education and inspire their students to action. Teachers must be confident in their knowledge of climate change science and also competent in their ability to empower student action. In order to build this confidence, teachers need sustained learning and practice in climate change education, as well as exposure to student leadership and action. Our curriculum resources and training are interdisciplinary and experientially designed to foster problem-solving and critical thinking skills, and culminate with a solutions-oriented lesson. We reach educators through our social media presence, email list, and a large network of partners.