

2023 HOST grant application

Application for Hands-On Science and Technology (HOST) Grant

The Host program is funded with the generous support of the Vermont Technical Council, the VASE Board of Directors, and generous donors. Since its inception, over \$100,000 in grant funds have been awarded to HOST and SEG (Small Equipment Grant) recipients.



These grants are intended to provide funding to support hands-on cooperative learning, preferably project-based, outside of a traditional school classroom setting. This may include science or technology clubs, teams such as robotic clubs, and individual projects -- all located in VT.

Organization Name: * Primary Contact(s): *

Smokey House Center Walker Cammack, Ken Smith

Affiliation
(i.e. FIRST, 4H, club, school ...)

Independent nonprofit environmental education organization

Street Address: *

426 Danby Mountain Road, Danby, VT 05739

City or Town (must be based in Vermont): *

Danby, VT

Zip Code: *

05739

Website (optional):

<https://www.smokeyhouse.org/>

EIN (Employer Identification Number):

Optional, if known-

03-0269539

Non-Profit status: *

Yes, non-profit

No

Other: _____

My organization has applied for a VASE HOST grant in the past *

- Yes
- No
- Don't Know

If your organization received past HOST grant, was a final report submitted? *

- Yes
- No

NARRATIVE

Brief Summary of Proposed Project (please limit your response to no more than 5 sentences or 100 words)

High School science students will work in the 30 acre Smokey House sugarbush to install a remote monitoring system and use it to measure the impacts of temperature and vacuum on sugarbush production. The system will remotely monitor sugarbush vacuum pressures, temperatures, and sap tank levels and connect to student phones. Goals for the project will be to teach students a) basic knowledge and skills involved in sugarbush operation b) use of a remote monitoring system for monitoring vacuum levels in a tubing system c) how to collect scientific data d) how to perform basic statistical analysis with scientific data.

Funding amount requested: *

(projects can be funded up to \$1,500)

\$1,500

Description of and motivation for your program. Please include the following points in no more than 500 words: *

Describe in sufficient detail the program for which support is requested.

- Brief description of your group- what is its mission, approximate number of participants, age range and demographics of its members.
- Describe specific activities that the grant will support.

The purpose of this grant is to give high school students hands-on experience in Vermont's technology intensive maple industry and to introduce them to the scientific method through a meaningful scientific study with a university research partner.

Specifically, this project will bring 6-10 high school students from the Bennington Rutland area into the Smokey House Center sugarbush in December and January, where they will help install a remote monitoring system that will measure sugarbush tubing vacuum level, sugarbush temperatures and sap tank levels. Students will use their phones to record video of the installation.

During the course of the maple season, students will monitor the vacuum levels in the different sap lines and, when feasible, assist Smokey House staff in repairing damaged lines. Students will also assist in recording data correlating temperature to sap production.

At the end of the season, the students will use the compiled data on vacuum levels and temperatures and do a simple statistical analysis to determine the significance of their impacts on sap production. Students will graph the relationships.

The final steps of the project will be for students to produce a video with French subtitles (important in the maple industry) describing their project and their findings. The video will be released on Facebook and Youtube. The students will also write an article for the Maple News - the maple industry newspaper. The project will be completed by mid June, 2024.

This project will be carried out by Smokey House Center staff with guidance by Mark Isselhardt of the University of Vermont's Proctor Maple Research Center. Smokey House Center is a living laboratory that advances ecologically sound farming and forestry through the integration of research and innovation undertaken with its farmer, forester and academic partners on its 5,000+ acres of forest and farmland. Smokey House Center's mission is to maintain a working landscape that promotes sustainable agricultural and forestry practices while engaging people in meaningful ways. At the heart of this mission is an ongoing commitment to weave place-based youth education into all activities of the living lab.

Project Budget *

• Provide a budget, including proposed equipment or supply purchases, software, tools, travel, or other expenses for which support is requested, along with goals to be achieved through these resources. Describe other potential or confirmed funding sources with projected amounts. (If you would like to send a project budget by email as an attachment, be sure to include your project title, organization and contact name with the attachment to VTSCIENG@gmail.com)

Requested Funds: \$1,500

The funds for this grant will go entirely to the purchase of a remote sugarbush monitoring system (multiple manufacturers including CDL and Smartrek make entry level monitoring systems that fit within the budget).

Smokey House Staff In-Kind Staff Support

Smokey House Center will provide in-kind support for staff time for the supervision of the students with the monitor installation, for assistance in statistical analysis and scientific interpretation. Smokey House Center Staff will also assist students with video production and article writing. The estimated support in labor is as follows:

Installation of remote monitoring system (3 staff) 30 labor hours@\$20/hr:	\$600
Support in monitoring system levels (3 staff) 100 labor hours @\$20/hr:	\$2,000
Support in statistical analysis (1 staff) 8 labor hours @\$20/hr:	\$160
Assistance in video production (1 staff) 24 labor hours @\$15/hr:	\$360
Assistance in article writing (1 staff) 4 labor hours @\$15/hr:	\$60

Pizza and dark chocolate to fuel students for sugarbush work and project review meetings:	\$200
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Smokey House Administrative Overhead of 10%:	\$372
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Total in-kind support from Smokey House Center:	\$3,752
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Student In-kind Support

The students themselves will also financially support the project because they will provide their own transportation to the sugarbush.

8 students travel an average round trip of 30 miles 3 times at the federal mileage rate of 65.5 cents per mile:
\$472

Total In Kind Support:	\$4,224
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Project Evaluation *

• I will submit a brief written final report summarizing project outcomes and future plans. In my report, I will document how funds were used.

Grant recipients may be invited to attend the Spring VASE membership meeting of scientists and engineers to give a presentation on the outcomes of their project. We also request grantee teams to prepare a brief (few minutes) creative YouTube video demonstrating their project and possibly the collaborative team work leading up to its fruition. (Note eligibility for future funding will be influenced by the submission of final reports with expenses, videos, and pictures.)

Yes

No

What Success looks like-

1. To be successful, the activity must be primarily hands-on
2. Funds should directly support those doing the learning or making, not to classes, workshops, etc.
3. The activity should support the skills development and/or careers of the participants.
4. The activity should enhance collaboration among different organizations and/or age groups.
5. The activity should have a completion date within one year, and a plan to meet that date.
6. The activity should lead to a result which can be evaluated. Success should be measurable.
7. The organization should use the funds wisely and document how the funds are used.
8. Is your project aligned with VT science standards?

Typed Signature of Applicant with applicant's role for the project *

Walker Cammack

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