

MAEP thanks the following sponsors of our 2019 Annual Dinner...

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**MAEP Wishes thanks all of
our 2019 Golf Outing
Sponsors who make these
education grants
possible!**





**Your support at the
MAEP annual
golf outing
provides funding for
environmental
education.**



www.maep.org



2020 MAEP Golf Outing

SAVE THE DATE

JULY 14th, 2020





Education Grant Committee Members

- Kelly Gallagher
- Jennifer Hardy
- Kathleen Klein
- Jennifer Lagerbohm
- Dave Lanzola



MAEP received **21 grant requests** totaling **\$31,740.16**

And selected **11** grants for a total of **\$13,300** in awards...

Evaluations took into consideration:

1. Hands-on environmental experiential education
2. Quality/uniqueness of the educational experience (underserved populations)
3. Geography and populations in Michigan (4 corners NSEW & greatest impact #'s)
4. Effort is made to fully fund programs to ensure viability of the program



The recipients of the 2019 MAEP grants are:

1	MAEOE – Annual Teachers Conference	MI at Large	\$1,000.00	
2	AIPG Student Scholarships – MAEP sponsorship	MI	\$600.00	
3	New Buffalo – Solar Can Collectors	West MI	\$1,000.00	West MI
4	FOTR – Frog and Toad Survey Workshops	SE Michigan	\$1,500.00	SE Michigan
5	Hawk Woods	SE Michigan	\$1,355.00	SE Michigan
6	River Raisin	Lenawee County	\$1,031.87	Lenawee
7	An Investigation of Bat Ecology and Population Decline in Houghton County	UP / Houghton	\$1,500.00	UP
8	Bozymowski Compost Tumbler	Macomb ISD	\$116.02	Macomb
9	An NGSS Investigation: Can CO ₂ Levels in the Classroom Be Reduced by Plant Air Purifiers?	Detroit /Cass	\$2,237.11	Det PS
10	Interlochen Stormwater Runoff Watershed Project	Interlochen	\$1,000.00	W Upper LP
11	St. Clair River Discovery Cruises	Port Huron Area	\$1,960.00	St. Clair County
		TOTALS	\$13,300.00	

Michigan Alliance for Environmental and Outdoor Education



Tustin, Michigan

Early outdoor education has been documented to have an impact on student interest in careers in science & engineering.

MAEP sponsored along with AWMA & AIPG & WM

MAEOE
\$1,000

The conference was attended by 128 educators

Funding provided for 20

Scholarships & Stipends...

The MAEOE Conference encourages “Environmental Literacy” for our next generation

What is Environmental Literacy?

Environmental Literacy can be defined as:
possessing the basic ecological awareness,
understanding and skill to have the ability to
make informed decisions and to choose actions
that lead to the least amount of detrimental
effects on the environment.



The MAEOE Conference educates for effective outdoor education...



\$600.00 provided to AIPG for Professional Development for college students.



The largest geosciences association devoted to ethical and professional practices in the U.S.

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STUDENTS

Scholarships, Mentoring, Job Opportunities, Local Activities



AMERICAN INSTITUTE of PROFESSIONAL GEOLOGISTS



New Buffalo Area Schools
Home of the Bison

...Creating a Culture of Learning and Respect



The Heart of
Harbor Country
in Southwest
Michigan

Mr. Richard Eberly & New Buffalo High School –

Previous Recipient (2013) \$1,000.00

Solar Can Heat Collectors

Cut heating expense by 50%

Cutting Costs with Solar Energy



Design & Construction
of Solar Heat Collectors

Students help low-income families build and install heat collectors in their homes.

Desired Outcomes:

- 1) Educate more of the public on the savings and advantages of pop can solar heat collectors
- 2) Train the public how to build their own by producing a video of the construction and installation process to a website and Youtube
- 3) Installed collectors on the local township fire department to display the technology on a high profile building.



**Cutting heating
expense by 50%**



Awarded \$1,500.00



Rouge Frog & Toad Survey

Background

Amphibians are sensitive indicators of habitat quality and their presence or absence can be used to assess wetland health. Wetlands absorb and filter stormwater, helping to protect and clean the river. Wetlands also provide critical wildlife habitat. The presence of a diverse assemblage of frog and toad species is an indication of high quality wetlands. Calling amphibians (frogs and toads) can be readily surveyed through listening surveys.



Survey

In 1998, as part of efforts to assess wildlife habitat for the **Rouge River Area of Concern** Friends of the Rouge began training volunteers to survey for calling frogs and toads in the watershed.

The Rouge River Watershed Frog & Toad Survey is a volunteer listening survey. Volunteers are trained to distinguish the breeding calls of the **seven frogs and one toad** found in the watershed. Surveyors choose a quarter square mile area within the watershed that they survey independently on warm spring nights.

Volunteers

Volunteers attend a two hour training workshop in the spring where they are instructed on frogs and toads of the watershed, their calls and how to survey. A call cd and the Rouge Frog & Toad Survey Participant's Guide are provided to all volunteer teams. Volunteers choose a survey block of a quarter square mile area with wetlands close to them to survey.

Surveys are done independently on damp warm evenings from March through July. Surveys involve listening for three minutes and noting which species are calling. Surveys must be done after dark several times a month. Completed forms are returned to Friends of the Rouge who compiles, maps and reports on the data.



\$1,355.00

Hawk Woods Nature Center
Auburn Hills, MI

Teaching Teachers
Project Learning Tree

Michael Mansour –
Founder &
Naturalist Educator



Fourth Grade is a critical step in the K-12 NGSS and has become an important time for capturing the interest in science education. Outdoor teaching is a specific set of skills that professional development opportunities frequently are not available.

We have been working with 28 identified teachers in our Teacher Outreach Initiative.

Approximately 700 students will be taught with these materials and their skilled teachers. (see attached list of teachers and schools)



[illegible]





Three Schools – 5th and 6th graders –

12 groups visiting eight (8) – 25 minute hands-on presentations related to water, conservation and natural resources.

2c. Educational objectives.

After attending the River Raisin Water Festival, students will:

1. Identify different plants and animals that rely on clean water in Southeast Michigan.
2. Understand that their actions affect river and water health.
3. Understand how interconnected water is, what a watershed is, and how land use affects water quality.
4. Make small changes in their lives that can make a big impact on water quality.
5. Explore different career options in the natural resources realm.



HOUGHTON
PORTAGE TOWNSHIP
SCHOOLS



\$1,500.00

Bat Ecology & Bat Population Decline in Houghton

- 100 students in 10th grade Biology class
- Alex Geborkoff, HS Science teacher
- Julie Antilla, HS English teacher
- John DePue, MDNR wildlife biologist
- Dr. Amy Marcarelli, Michigan Tech Univ. Dept. of Biological Sciences
- Quincy Mine Hoist Association
- Keweenaw National Historical Park
- Lake Superior Stewardship Initiative
- Michigan Tech Center for Science & Environmental Outreach



400 Parents attending Parent- Teacher Conferences will view display
300 students in grades 9, 11, 12 will view display in school library
500 library visitors at Houghton-Portage Twp. Public Library will view display



2a. Name of the environmental project.

An Investigation of Bat Ecology and Population Decline in Houghton County

2b. Description of the project.

White Nose Syndrome (WNS) has killed millions of bats across the U.S. over the past 14 years. The Keweenaw is home to many large populations of bats that have been severely impacted by WMS. People are often uninformed about the benefits of having healthy bat populations and do not understand the impact WNS is having on the bats. The entire 10th grade Biology class of 100 students (2019-20) will participate in our project to monitor bat populations around our school, research bats and WNS, and develop informational brochures and presentations for the community.

2c. Educational objectives.

The project will:

- i) Increase students understanding of Bats' role in the ecology of UP forests and maintaining the biodiversity of the Lake Superior watershed,
- ii) Engage students in determining how they can best promote bat conservation,
- iii) Provide opportunities for the 10th gr. students to present educational presentations to Houghton elementary and Houghton middle school students, their families, and community residents.
- iv) Guide students in developing researchable questions about local bat populations and WNS.
- v) Create informational materials (flyers/posters/brochures) about bats and WNS for public distribution.
- vi) Set up acoustic recording equipment and software to identify bat species on the school campus and track their activity;
- vii) Collect long-term data on local bat populations and present their findings at a public venue, such as the Houghton-Portage Township public library.



Macomb Intermediate School District
Leadership, Service & Support in Education

ABOUT
MISD
▼

MISD
SCHOOLS
▼

SPECIAL
EDUCATION
▼

MISD
DEPARTMEN
▼



\$116.02

Compost Tumbler



John A. Bozymowski Center for Education
11870 ELDORADO
STERLING HEIGHTS, MI 48312
586-939-5391



Macomb Intermediate School District
Leadership, Service & Support in Education



2e. Desired outcome of project.

We aim to teach our students about environmental responsibility, about how their choices impact our climate and the climate that our families will inherit from them. We also plan to do science experiments looking at how plants grow with the same seeds/sun/water but different mixtures of compost.

58 students currently attend the school - all classrooms will be participating in composting to reduce the overall waste produced by our school, limit food waste, and potentially grow more productive plants in a school garden.



CASS TECHNICAL HIGH SCHOOL
Cass Tech #1, Second To None

\$2237.11

NGSS Investigation: Can CO₂ Levels in the Classroom Be Reduced by Plant Air Purifiers?

CO₂ Gas Sensor



[Learn how >](#)

Plants are the Earth's natural solution for cleaning and purifying the air. The Plant Air Purifier's hydroculture system is dozens of times more effective than a single houseplant grown in soil. The Plant Air Purifier has been found to remove formaldehyde, benzene, and other volatile organic compounds as well as dust, allergens, and pet dander. It is the cleanest greenest solution for pure, cleaner air.



It is the cleanest, greenest solution to clean, fresh air



The **COMPACT** Plant Air Purifier

[Same Green Technology In a smaller model >>](#)



CASS TECHNICAL HIGH SCHOOL
Cass Tech #1, Second To None

CO₂ Gas Sensor



Students will use hands-on research to understand if plants can lower CO₂ levels in the classroom...



The most powerful, connected,
and versatile interface ever.

PLAY THE VIDEO ▶



LabQuest 2 is the most powerful, connected, and versatile data-collection device available for STEM education. Engage your students with hands-on science in your classroom or in the field.



Section 2 - Your Proposed Project

The MAEP may fund or partially fund activities, projects, or programs that are related to environmental education.

2a. Name of the environmental project: An NGSS Investigation: Can CO₂ Levels in the Classroom Be Reduced by Plant Air Purifiers?

2b. Description of the project.

In the June 2016 Environmental Health Perspectives Journal (Volume 124, Number 6) there is an article entitled: *Associations of Cognitive Function Scores with Carbon Dioxide, Ventilation and Volatile Organic Compound Exposures in Office Workers: A Controlled Exposure Study of Green and Conventional Office Environments*. One conclusion from this research study is: "Cognitive function scores were 15% lower for the moderate CO₂ day (~ 945 ppm) and 50% lower on the day with CO₂ concentrations of ~1,400 ppm than on the two Green+ days (Table 5, dividing the average Green+ estimate by the moderate CO₂ and high CO₂ estimates, respectively)."

During the previous school year, I had taken CO₂ measurements in my science classroom. It was immediately evident that when the classroom was without students present, the CO₂ content ranged below 200 ppm. When 36-38 students came into the classroom, the range immediately increased to over 1,000 ppm. I was concerned that this environmental pollutant was affecting the functioning of my students. The cited article above verified that there was current research to confirm my concern.

Plants such as Peace Lilies purify surrounding air. My AP/IB students will test this premise using the Plant Air Purifier (Amazon). This device has a self-regenerating activated carbon filter and air cleaner. According to the product statement: "The air cleaner uses NASA-developed space technology that multiplies air-cleaning power of a common house plant (not included) 60 times or more."

My AP/IB students will collaboratively write a survey for students to take in the tested classrooms at the same time the CO₂ content level of the classroom is recorded. The survey will consist of questions regarding how the students feel (such as sleepy, experiencing a headache, etc.) in the tested classroom.

\$1,000.00

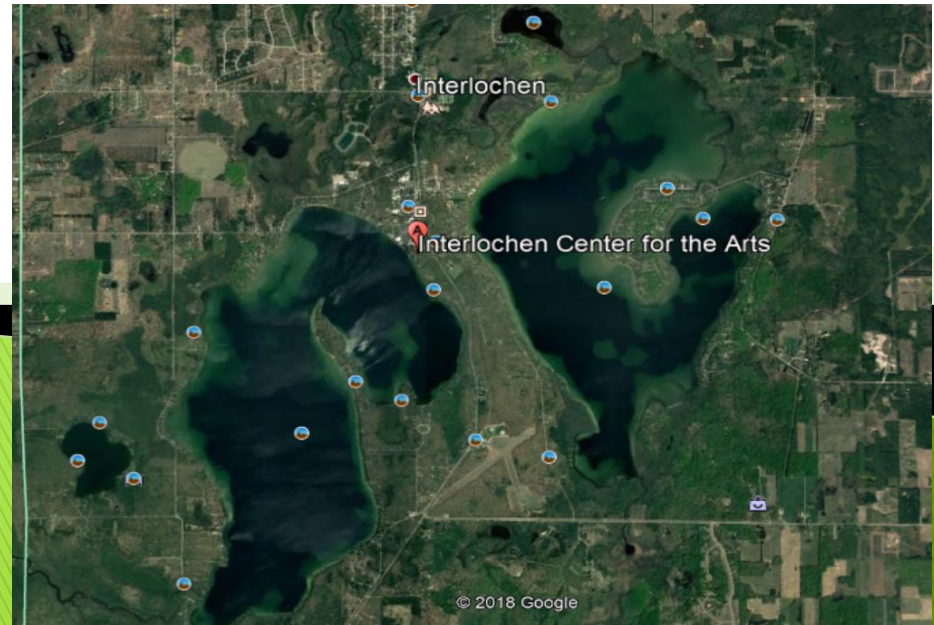
Interlochen Center for the Arts (ICA) was recognized by the US Department of Education as one of 38 national award recipients for the Green Ribbon School award for ICA's commitment to being exemplary in the ways it promotes sustainability and green education.

Interlochen is uniquely situated between two lakes, on the eastern and western borders of the campus.

Because of this unique situation, Watershed Education is incredibly relevant to those living and interacting on campus.

Through the course of a watershed unit of study, students have identified issues related to the water runoff that is being deposited into the lake.

Students will propose plans for possible solutions to the runoff occurring on our campus and then present the proposal to our administrative board for adoption.



2c. Educational objectives.

Students will:

- Research issues with stormwater runoff on our campus
- Identify the sources of runoff contaminants that are being carried to the lake
- Conduct field research labs in the lake via water quality lab testing, soil bore testing (possibly adding monitoring wells), macro/micro invertebrate testing, aquatic plant identification
- Understand biodiversity of the aquatic communities and the effects that stormwater runoff has on our aquatic communities
- Learn how to read and interpret geological and topographic maps using GIS
- Explore our site's geology and hydrogeology to determine a suitable way to reduce and/or eliminate stormwater runoff
- Implement research test runs via prototype investigation, recording data, and then interpret data gathered
- Research bioswales and rain gardens and identify appropriate native plants
- Prepare a thoroughly researched plan of action for resolving the stormwater runoff issue on campus
- Prepare a budget cost analysis of various alternative surface models to be used on campus in areas that are heavily paved and have high foot traffic
- Present the researched plan and actionable goals to the administrative board at ICA for adoption
- Discover agency in their voices as agents of change in environmental justice



Friends of the St. Clair River

PO Box 611496, Port Huron, MI, 48061

info@scriver.org • www.scriver.org

\$1,960.00

Since 2007, Friends of the St. Clair River has been protecting the health and future of the St. Clair River while educating about environmental stewardship and conservation efforts on Michigan's "Thumb Coast".

Friends of the St. Clair River is St. Clair County's largest environmental non-profit and only watershed-based organization.





Funding for the St. Clair River Discovery Cruise program will allow Friends of the St. Clair River to create, develop and deliver a place-based education curriculum for 1,000-1,200 St. Clair County students during the school year on board the local passenger sight-seeing cruise boat - the Huron Lady.

Our St. Clair River Discovery Cruise program will give students real world experiences that connect local water quality research and habitat restoration efforts to the health of the St. Clair River and its watersheds.

There is no other water-based environmental education program of this kind that has been offered in partnership with Friends of the St. Clair River, local school districts and the Huron Lady.



The Nature of Lake St. Clair

Take an educational cruise on Lake St. Clair to discover the rich variety of aquatic life that makes Lake St. Clair so special. Plants, animals, and habitats — including one of the world's largest freshwater deltas — will be explored.

CONGRATULATIONS MAEP 2019 GRANT RECIPIENTS!!!



Thank you teachers for educating the next generation
to appreciate, preserve and protect the planet...