



2017 Water Festival Session Descriptions

MORNING ONLY

1. Leave No Trace

Presenter: Nathan Miller, Keweenaw Land Trust

Students will engage in activities that illustrate some of the Leave No Trace principles ---plan ahead, travel and camp on durable surfaces, leave what you find, dispose of waste properly, respect wildlife, minimize campfire impacts and be considerate of other visitors.

2. U.S. Coast Guard – Water Safety & Careers

Presenters: US Coast Guard officers

The local Coast Guard station in Dollar Bay is responsible for keeping boaters safe on Lake Superior and connecting waterways which includes performing rescues when needed---in all seasons and in all weather. Ask them what they like about their job and what it takes to become a “coastie.”

3. Water Haiku

Presenter Erin Burkett, PhD Candidate, Dept. of Social Sciences

Haiku are Japanese poems known for their very short length. Traditional haiku are written about the natural world. In this creative writing session, students will write their own water-themed haiku and share with their classmates.

4. Studying Clouds in the Laboratory

Presenter: Dr. Will Cantrell, Dept. of Physics

Why does water fall from the sky? Clouds are a crucial part of the hydrologic cycle. In order to study them in greater detail to understand the processes that lead to rain formation. I will discuss cloud formation in our facility and then demonstrate it.

5. Mini-Motorless Boats

Presenter: Dr. Hassan Massoud, and graduate students Saeed Jafari Kang, Esmaeil Dehdashti, and Rohit S. Pandhare, MTU Dept of Mechanical Engineering- Engineering Mechanics

Ever see a boat propel itself without the use of a motor or sail? We will explore how a fluid mechanical phenomenon, called Marangoni effect, can be utilized to make a self-propelled craft. Use a “chemical motor” (detergent) to reduce water surface tension, propelling the boat forward, all without the use of a mechanical propeller! We can harness this concept to design miniature surfing robots with a wide range of engineering applications.

6. Nitrates in Your Water!

Presenter: Troy Skidmore-Kinnunen & Sabrena Swanson, NECi Superior Enzymes

Find out about a new method for testing water for nitrate contamination. Test water samples for nitrate using NECi's test kits. NECi's nitrate method won EPA regulatory approval in September 2017.

7. Going Deep in Lake Superior with Underwater Gliders

Presenters: Donna Fard and John Naglak, MTU Dept of Mechanical Engineering- Engin. Mechanics

Students explore the simple physics behind underwater gliders, the vehicles' locomotion, and their uses. Students will build their own micro underwater gliders.

8. Corrosion & Chemistry

Presenter: Dr. Katherine Perrine, Dept. of Chemistry

How can we stop corrosion of metals? Corrosion of water pipes of various materials led to toxic heavy metal dissolution into the water supply that led to the Flint water crisis. Many pipes in our water infrastructure have materials that could lead to tainted water. These could also change when we put mixture of chemicals into our water supply. Participate in experiments to investigate how different materials react with aqueous solutions to cause surface corrosion.

9. Pollution Dilution & Emerging Contaminants

Presenter: Muxue Zhang & Padmalathika Varanasi, Graduate Students, Civil & Environ. Engineering

How do we measure very small amounts of toxic pollutants? How are astronauts able to stay in space reusing the same water for six months? Wastewater treatment has become so advanced that cities can now reuse their wastewater as drinking water in a continuous loop.

AFTERNOON ONLY

1. Water Cycles and Human Impacts

Presenter: Joe Panci, Conservation Education Coordinator, Ottawa National Forest

Investigate the water cycle and the human connections and impacts upon the land in this lively Water Pictionary-based activity. Come prepared to jump right in and then generate solutions.

2. Social Science Career Opportunities related to Natural Resource Management

Presenter: Emily Prehoda & Jennifer Dunn, Dept. of Social Science

We will play a game and connect it to global fisheries, then launch into a discussion about careers in social sciences related to water and natural resource management.

3. Lake Sturgeon Ecology

Presenter: Dr. Nancy Auer, Dept. of Biological Sciences

Find out from a sturgeon expert, how this amazing fish adapts to and interacts with its habitat and why it's one of the longest living fish in the Great Lakes!

4. Lake Population Dynamics

Presenter: Tayler Zallek, Graduate Student, Dept. of Biological Sciences

Play a hands-on game that simulates competition and population dynamics in lakes! Students experience how individuals and populations are affected by availability of resources, like food, water and shelter. Students apply what they learn to resource availability facing the Great Lakes region.

5. The Lake Turned Green

Presenter: Haydn Henderson, Graduate Student, Dept. of Civil & Environmental Engineering

Using a high-powered microscope to identify and count plankton from an inland lake feeding into Lake Michigan. The types of algae present at a given time of the year can help identify the damage or potential health risks a body of water can face as a result of being too rich in nutrients from industrial or agricultural pollution. Help look at different types of plankton to illustrate the species of algae that were present in Mona Lake, MI and what they may mean for the health of the lake.

6. Great Forests Make Great Lakes

Presenters: Danielle Sharron and Kristan Schmidt, Northern Institute of Applied Climate Science

Learn about how the water cycle in our area will be affected by a warming climate, and what this will mean for our forests and trees.