



Above: On day four of the education program, the teachers/students visit the University of Minnesota. Right: The teachers are dwarfed by a truck while visiting Cleveland-Cliffs.

Below: Students visit the Port of Duluth-Superior to learn more about how cargo transits the Great Lakes/St. Lawrence Seaway.



# Teaching teachers

*Great Lakes maritime education program extends beyond the classroom*

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will never look at the Duluth-Superior Harbor again in the same way," said Sarah Pregitzer, a sixth-grade science teacher at Grant Middle School for the past 32 years who participated recently in an educational program on the Great Lakes/St. Lawrence Seaway shipping industry. "It's fascinating to know all that is going on."

Most teachers, students and Great Lakes residents have little knowledge of the maritime transportation industry operating on the Great Lakes and the essential role that shipping plays in the state, U.S. and world economy by providing many of the household products used daily.

To tackle this widespread lack of awareness and knowledge on the part of K-12 teachers and students, Michigan Technological University collaborated with the Western U.P. Center for Science, Mathematics & Environmental Education to design and implement an education program for classroom teachers and non-formal educators. In its summers, 21 teachers attended two, week-long summer sessions. The sessions include group presentations and discussions, field visits to maritime museums, a U.S. Coast Guard facility, port, tugboat, lighthouse, coal and taconite facilities and more.

The goal of the institute is for teachers to become familiar with the shipping industry and be able to incorporate their knowledge

and experiences into new lessons for their classroom. Another part of the education/outreach effort is the development of an interactive web module on Great Lakes shipping (<http://tecalive.mtu.edu/series.htm>) that's receiving rave reviews.

In the classroom, the institute opens with the "students" taking a quick quiz to gauge their knowledge:

- Out of every \$100 spent by Americans, how many dollars are involved with Great Lakes shipping?
- One 1,000-foot freighter can carry the same amount of cargo as how many fully-loaded semi trucks?
- A 1,000-foot laker can hold enough iron ore pellets to make how many automobiles in the U.S.?
- What percentage of the U.S.'s iron ore used in steel production passes through the locks at Sault Ste. Marie, Michigan?
- Can you name three products made from each of the "Big Three" cargoes carried by U.S.-flag ships on the Great Lakes?

Last summer, two five-day summer teacher institutes were conducted for 20 teachers from Ohio, Massachusetts, Minnesota and Michigan. The first workshop took place in Duluth-Superior and focused on the shipping industry: Canadian National, Burlington Northern, Midwest Energy and Lake Superior Warehousing. The second workshop took place in the eastern Upper Peninsula of Michigan and focused on the history and current management of the Soo locks and their critical importance to Great Lakes shipping. Teacher participants earned two university credits from Michigan Tech University for attending the institute.

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Another week-long teacher institute was held this summer from July 29-August 3 in Duluth. Participants from Mexico, Puerto Rico, Washington D.C., Ohio, Wisconsin, Michigan, Iowa and Pennsylvania attended.

Institute participants are encouraged to make community and conference presentations and publish journal articles describing their newly developed lesson plans. Lisa Bircher, an East Palestine High School teacher from Ohio, has submitted an article to the National Science Teacher's journal *Science Teacher* about the new lessons that she developed after her 2006 institute experience. Sarah Pregitzer presented at the Michigan Science Teachers Association annual conference in Grand Rapids, Michigan in March.

Joan Chadde, project coordinator, presented at the Michigan Council of Social Studies teachers in Lansing in February. Attendee Cindy Gezon, Groups & Cruise Coordinator for Shepler's Mackinac Island Ferry, wrote: "I truly enjoyed your informative presentation on 'Shipping on the Great Lakes'...to be honest, I had not considered entire lessons on the topic of Great Lakes shipping before your presentation."

In addition to teacher training, the Western U.P. Center is hosting a monthly Great Lakes Presentation Series at the local library from January-May, as a prototype of what can be done in communities throughout the Great Lakes basin. More than 80 children and adults came out on a wintry evening in January to attend a presentation by ship captain David Laban and deck hand Derrick Wiitanen, and to participate in a variety of hands-on activities including: What Does a Ship Captain Need?, Shipping Lingo, Name the Parts of a Ship and Can You Safely Navigate Your Ship Through the Harbor?

Another education/outreach is the creation and distribution of 12 Great Lakes Shipping Teaching Trunks containing childrens' books, videos, hands-on teaching tools, including samples of typical Great Lakes cargoes, and other educational materials. The trunks will be distributed to maritime museums, Great Lakes education centers and other educational sites in Michigan, Wisconsin, Minnesota, Illinois, Indiana and Ohio. A highlight of the trunk is the 9-foot by 12-foot canvas floor map of the Great Lakes/St. Lawrence Seaway, which will be used for teaching about shipping and receiving ports, cargoes, routes, geography and more.

This variety of education/outreach activities will reach tens of thousands of students, classroom teachers, non-formal educators and citizens either directly or through the development of a diverse array of Great Lakes maritime transportation education teaching tools.

The program is funded with a grant from the Great Lakes Maritime Research Institute ([www.glmri.org](http://www.glmri.org)), which represents a consortium of the University of Wisconsin-Superior and the University of Minnesota Duluth, along with nine affiliate colleges and universities.

For further information contact Joan Chadde at (906) 487-3341 or go to [http://wupcenter.mtu.edu/education/great\\_lakes\\_maritime/resources.htm](http://wupcenter.mtu.edu/education/great_lakes_maritime/resources.htm). ■