Environmental & Field Science Workshop for K-12 Educators
10 AM, Friday, May 3 through 4 PM, Saturday, May 4, 2002
MTU Ford Forestry Center – Alberta, Michigan

Workshop Highlights

FRIDAY, May 3rd Sessions
• Field Geology for Secondary Teachers
• Leave No Trace in the Outdoors
• Field Geology for Elementary Teachers
• Tracking Events in Nature
• Waste & Recycling
• Butterflies of the North Woods

SATURDAY, May 4th Sessions
• Michigan Protocols for Stream Monitoring
• Wilderness Navigation
• Schoolyard Ecology

Workshop Sponsors
• Western Upper Peninsula Center for Science, Mathematics & Environmental Education
• Seaborg Center at Northern Michigan University
• National Park Service at Pictured Rocks National Lakeshore
• U.S. Fish & Wildlife Service at Seney National Wildlife Refuge
• Northwoods Math & Science Center at Delta-Schoolcraft Intermediate School District
• Michigan Technological University
WORKSHOP PROGRAM

FRIDAY, MAY 3 (Eastern Standard Time)
10:00 AM – 11:00 AM  Registration & room assignments
10:00 AM – 5:00 PM  (Choose TWO half-day sessions OR ONE full-day session)

(1) Field Geology for Secondary Teachers  (Gr. 6-12)
George Robinson, Ph.D.  Geology & Mineralogy, Seaman Mineral Museum, Michigan Technological University.
Visit interesting geologic sites, such as a copper fissure vein, conglomerate lode, glacial grooves, and the historic Quincy Mine as you travel through the Keweenaw Peninsula.

10:00 AM – 1:00 PM
(2A) Leave No Trace in the Outdoors  (Gr. K-12)
Mark Gleason, director, Isle Royale Institute
This session will present a variety of minimum-impact recreation techniques that participants will try out for themselves–campsite selection, fire-building, latrines, cooking, etc. Can you leave no trace!

(2B) Field Geology for Elementary Teachers  (Gr. K-5)
Barbara McTaggart, Ph.D.  Geohydrology, Western UP Center for Science, Mathematics & Environmental Education
Hike to Canyon Falls where we will practice being field geologists–look for examples of glaciation, deposition, erosion and learn tips on how to conduct a safe geology field trip.

1:00 PM  Lunch
2:00 – 5:00 PM
(3A) Tracking Events in Nature  (Gr. K-12)
Larry Weber, high school biology teacher & author of Backyard Almanac and Butterflies of the North Woods
Find out how you can use phenology, or the study of periodic natural occurrences such as migrations, frog calls, and blossoming, as the basis for a year-long science course.

(3B) Waste & Recycling  (Gr. K-5)
Barbara McTaggart, education specialist, Western UP Center for Science, Mathematics & Environmental Education

6:00 PM  Dinner
7:30-9:00 PM  Butterflies of the North Woods
Larry Weber, high school biology teacher & author of Backyard Almanac and Butterflies of the North Woods
Slide show of the 61 species of north woods butterflies. Participants will learn about their habitat, occurrences, behavior, favorite foods and identifying characteristics.

SATURDAY, MAY 4  (Eastern Standard Time)
7:30-8:00 AM  Breakfast
8:30 AM - 3:30 PM  (Choose ONE full-day session)
(1) Michigan Protocols for Stream Monitoring  (Gr. 5-12)
Nicole Vidales, Michigan Dept of Environmental Quality
Participants will learn how to use Michigan’s stream monitoring protocols to collect and report data on the health of local streams.

(2) Wilderness Navigation  (Gr. 4-12)
Mark Sanderson, environmental education coordinator, Seaborg Center, Northern Michigan University
Participants will learn how to read and interpret USGS topographic maps, practice orienteering skills with map and compass, and learn how to use a GPS (the Global Positioning System) receiver. Participants will use their skills to navigate a challenging orienteering course and learn to set up their own orienteering course.

(3) Schoolyard Ecology—Meeting the Benchmarks  (K-5)
Part I. Teaching Math & Science With Children's Literature  ~ Michelle Seppanen, teacher, CJ Sullivan Elementary School
Part II. Tracking the Seasons in Nature  ~ Larry Weber, author of Backyard Almanac
Part III. Migratory Birds  ~ Marianne Kronk, Seney National Wildlife Refuge and David Kronk, Pictured Rocks National Lakeshore
Wild migratory birds need habitat in two worlds – their breeding range and winter range. Fly home with some migratory bird educational activities that you can use immediately, and other bird education resources.

11:30 AM - 12:30 PM  Lunch
3:30-4:00 PM  Evaluations & Sharing
REGISTRATION FORM ~ Teaching With the Outdoors Workshop ~ May 3-4, 2002 (DUE Monday, April 15, 2002)

Name___________________________________________________ Phone__________________________
Address__________________________________________________________________________________________
School/Other Affiliation________________________________________ Email __________________________
Grade(s) Taught____________________ Subject(s) Taught___________________________________________

Workshop Session Selections & Fees:

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<thead>
<tr>
<th>FRIDAY (choose TWO half-day sessions OR ONE full-day session)</th>
<th>SATURDAY (choose ONE full-day session)</th>
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<tr>
<td>Full Day: 10:00 AM – 5:00 PM</td>
<td>___ Michigan Protocols for Stream Monitoring (Gr. 5-12)</td>
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<td>___ Field Geology for Secondary Teachers (Gr. 6-12)</td>
<td>___ Wilderness Navigation (Gr. 4-12)</td>
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<td>Morning: 10:00 AM – 1:00 PM</td>
<td>___ Schoolyard Ecology – Meeting the Benchmarks (Gr. K-5)</td>
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<td>___ Leave No Trace in the Outdoors (Gr. K-12)</td>
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<td>___ Field Geology for Elementary Teachers (Gr. K-5)</td>
<td>___ $65 registration</td>
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<td>Afternoon: 2:00 – 5:00 PM</td>
<td>___ $35 registration for university students</td>
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<td>___ Tracking Events in Nature (Gr. K-12)</td>
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<td>___ Waste &amp; Recycling (Gr. K-5)</td>
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TOTAL Workshop Fees (enclosed)

Send registration form and payment (make checks payable to CCISD) to:
Loret Roberts, Western UP Center, P.O. Box 270, Hancock, MI 49930

Location
This two-day workshop will be take place in the beautiful forested setting of Michigan Tech University's Ford Forestry Center located along US 41, 8 miles south of L'Anse. The Ford Forestry Center is the historic site of the restored Ford lumber mill; and offers lake, wetland and forest ecosystems for field activities, along with many hiking trails.

Accommodations
Participants stay in dorm-like rooms (doubles) and historic houses (sleep 6-10 persons). Sheets, blankets and pillows are provided. Participants will enjoy delicious meals and snacks from Friday lunch through Saturday lunch.

What to Bring
sturdy walking shoes pillow towel warm clothing binoculars (optional)
raingear warm jacket flashlight hat & mittens sleeping bag (optional)
Most of the workshop will take place outdoors. Participants should have sturdy footwear, dress for current weather conditions, and bring a backpack, rain gear, water and insect repellent for field trips.

NMU & MTU Credit Available
Teachers will have the option to take the workshop for credit through Northern Michigan University (1.0 ED 989 credit) or through Michigan Technological University (1.0 ED 5540 credit).

Registration
Workshop registration is $65 per person ($35 for university students). Registration includes all meals from Friday lunch through Saturday afternoon snack. Registration deadline for the workshop is Monday, April 15, 2002.

Teachers should ask their school or intermediate school district (ISD) about the availability of Eisenhower funds to cover registration and substitute fees:

- Gogebic-Ontonagon ISD
  Joy Maki (jmaki@goisd.k12.mi.us) (906) 575-3348
- Copper Country ISD
  Shawn Oppliger (sopplige@ccisd.k12.mi.us) (906) 482-4250
- Delta-Schoolcraft ISD
  Debra Homeier (dhomeier@dsisd.k12.mi.us) (906) 786-9300
- Dickinson-Iron ISD
  Dee Benjamin (dibenjamin@diisd.k12.mi.us) (906) 779-2653
- Eastern U.P. ISD
  Michelle Ribant (mribant@eup.k12.mi.us) (906) 635-2126
- Marquette-Alger ISD
  Bob Koehs (bkoehs@maisd.k12.mi.us) (906) 226-5116

For More Information
To find out more about the workshop, contact Joan Chadde at jchadde@mtu.edu or call (906)487-3341; or visit the Western UP Center’s website: http://emmap.mtu.edu/gem/wupcsmeec.html.
Stream Monitoring — Meeting the Hydrosphere Benchmarks
June 11-14, 2002

Visit streams, wetlands and take a watershed tour to learn how you can integrate history, literature, writing, social studies, science and math into a grade 5-12 curriculum unit your students will remember! Teachers will receive water quality monitoring equipment, activity guides, and learn the skills necessary to perform physical, chemical, and biological monitoring of local streams with their students using Michigan protocols. The workshop will address the interaction of human activities and the environment, and topics covered in life/earth science and social studies content strands. The workshop will take place at MTU’s Ford Forestry Center. Presenters include Michigan Tech faculty and Michigan Dept. of Environmental Quality biologists. MTU and NMU credit available (extra cost). Workshop registration is $175 and includes meals, lodging, instructional materials and monitoring equipment. Limited to 24 participants. Postmark applications by May 1st.

Ecology of the Great Lakes Aboard Research Vessel Lake Guardian
July 7-13, 2002

This institute is designed to teach educators about the physical, chemical, and biological components of the Great Lakes ecosystem. Lake Superior, Isle Royale National Park, and EPA’s 180’ Research Vessel (R/V) Lake Guardian will provide the ideal scientific and natural setting for this exciting learning opportunity. Participants will share triple cabins and have all meals aboard the Lake Guardian for the entire week as it travels along the Keweenaw Peninsula, crosses Lake Superior to Isle Royale, circles the island, and returns to Houghton. Through hands-on data collection and analysis, lab experiences, interactions with research scientists, and sharing with fellow educators, teachers will obtain new knowledge, skills and activities to teach about Great Lakes ecology. Workshop registration is approximately $430 and includes meals, lodging, and instructional materials. MTU credit available (extra cost). Limited to 20 participants. Postmark applications by Tues., April 2, 2002.

To request an application for these workshops: Contact Loret Roberts at the Western Upper Peninsula Center for Science, Mathematics and Environmental Education. Email: loret@remc1.k12.mi.us or Tel: 906-482-4520