

2007 Lake Huron Exploration Workshop: August 11 – 17, 2007

The Center for Ocean Sciences Education Excellence (COSEE) Great Lakes, in partnership with the Great Lakes Sea Grant Network, invites 4th-10th grade teachers and non-formal educators from the Great Lakes region to participate in the Lake Huron Exploration Workshop, August 11 – 17, 2007. This workshop is designed to promote Great Lakes and ocean sciences in formal and informal education and forge lasting relationships between science researchers and educators. Participants will be involved in classroom and field programs, work with scientists, examine curricula and resources, and explore classroom activities relating to the Great Lakes and ocean resources. **Fifteen educators will be selected from throughout the Great Lakes basin.**

This seven-day summer workshop will offer educators an excursion into Great Lakes and marine science education. Using the learning cycle of Excite, Explore, Explain, Elaborate and Evaluate, the workshop will immerse participants in inquiry, questioning, and experimentation, engage educators in concrete tasks, build on their experiences with students and deepen their content skills. Just as importantly, the workshop will demonstrate for educators how to connect their work to specific standards for student performance.

Topics for the workshop include: Geology of the Lake Huron Basin; the Lake Huron Biosphere; Great Lakes & Ocean Remote Sensing; Marine Archaeology; Maritime Cultural Resources (shipwrecks!); Saginaw Bay; Aquatic Invasive Species; and more. The topics include a blend of Great Lakes and ocean science designed to provide educators the background needed to infuse marine science elements into Great Lakes curricula.

During each day of the workshop, educators will interact with scientists involved in cutting-edge Lake Huron research. Scientists will provide background articles and papers, which will be discussed in an open forum, followed by a presentation on the topic. Curriculum applications will be examined and the scientists will be on hand to interact during classroom activities and field experiences. Each day will also end with a wrap-up session when educators and scientists gather and again share ideas on developing innovative ways of bringing the science to the classroom. The workshop will foster close interactions among educators and scientists, building a relationship that will carry into future endeavors.

Following the workshop, each participating scientist will be available to respond to on-line questions from educator participants and their students for one month during the school year. Depending on schedule they may also be available to participate in calls to classes via speakerphone, to visit classes or to provide opportunities for laboratory visits by educators and students.

Workshop Objectives

Our plan is for educators to be able to:

- Interact with scientists conducting research on pertinent Great Lakes and ocean topics;
- Synthesize and provide examples of how water characteristics interact with land, life, weather, and human activities;
- Demonstrate how to implement Great Lakes and ocean information into their existing curriculum or informal education media using traditional and/or electronic means;
- Compare Great Lakes systems with ocean counterparts, with regard to issues of human impacts and natural changes over time.

We are prepared to:

- Introduce educators to regional Great Lakes and ocean science research topics and high quality curricular and educational resources;
- Provide an effective interface between educators, Great Lakes and ocean science researchers;
- Provide fun, hands-on experiences for educators to enjoy and take back to their students;
- Promote inquiry learning through existing curricular and educational resources, aligning with National Science Education Standards;
- Facilitate the development, exchange and implementation of curricula and lessons for the participant's classroom;
- Provide for long-term support, evaluation and communication between COSEE Great Lakes and the workshop participants.

Participants will be expected to

- 1) Develop a reflective journal based on class activities;
- 2) Develop an electronic learning project or a curriculum development project;
- 3) Complete a curriculum integration plan for continuation of course ideas and scientist interaction;
- 4) Participate in all aspects of program evaluation.

Workshop Team

Steve Stewart, Education Co-Leader, Michigan Sea Grant; Workshop Coordinator

Rosanne Fortner, Ph.D., Director, COSEE Great Lakes

Robin Goettel, Associate Director for Education, Illinois-Indiana Sea Grant

Cindy Hagley, Environmental Quality Extension Educator, Minnesota Sea Grant

Nicole Koehler, COSEE Program Assistant, Michigan Sea Grant Extension

James F. Lubner, Ph.D., Education Coordinator, Wisconsin Sea Grant

Brandon Schroeder, Sea Grant Extension Educator/NE, Michigan Sea Grant

Rochelle Sturtevant, Ph.D., NOAA Sea Grant, GLERL

...plus research scientists throughout the workshop



Workshop Location

The Lake Superior Exploration Workshop will be based at the NOAA Thunder Bay National Marine Sanctuary and its Great Lakes Maritime Heritage Center in Alpena, MI (<http://thunderbay.noaa.gov/>). Workshop facilities will provide for suitable classroom space, meal and lodging accommodations and recreational time. The workshop will also include a number of field experiences arranged to address specific topics and located in proximity to the workshop location(s).



Participant Selection Criteria

Applications are invited from:

- 1) Teachers of grades 4-10 from the Great Lakes basin who teach or are willing to teach Great Lakes and marine science in their classrooms.
- 2) Educators from non-formal educational institutions that have Great Lakes or marine science exhibits or plan to add such topics to their programs.

All applicants must include 1) an abridged resume, 2) a personal statement as described on the application, and 3) a letter of reference from their principal or supervisor documenting the applicant's professional qualifications for the workshop and indicating that the administrator will support efforts to integrate Great Lakes/ocean science topics into the curriculum as these topics apply to state science standards.

Educators who are Native American or members of groups underrepresented in science and/or who teach significant numbers of students who are members of such groups are encouraged to apply. Selection criteria include: geographic distribution of educators, ethnic diversity, level of professional involvement; potential to use the workshop materials and concepts in the classroom; potential to share the workshop material with other educational professionals; and date of application receipt.

Application Procedures

All communications concerning the Lake Huron Exploration Workshop and applications should be addressed to:

Nicole Koehler, COSEE Assistant
Michigan Sea Grant Extension
21885 Dunham Road, Suite 12
Clinton Township, MI 48036

Phone: (586) 469-6094
Fax: (586) 469-6948
Email: nmk@umich.edu

Completed applications with required principal or supervisor signatures **must be received by June 1, 2007**.

Notification of participants and alternates will be made no later than June 12. In selecting individuals for participation and otherwise in the administration of this workshop, COSEE Great Lakes will not discriminate on the basis of race, gender, religion, national origin, age, disability, sexual orientation, or marital status.

University Credit

Participants can earn two (2) master's of education graduate credits from the University of Minnesota-Duluth for workshop participation. **COSEE Great Lakes does not pay tuition, but stipends may be used for that purpose.**

Information on enrolling for credit is available by contacting Dr. Bruce Munson, Chair, Department of Education, University of Minnesota-Duluth, 218-762-6324, bmunson@d.umn.edu

Participant Support

Workshop Participants will receive

- 1) Stipend of \$500
- 2) Lodging (double occupancy) and meals at the workshop location for six nights at no cost to the participant.
- 3) Travel support based on distance to workshop, not to exceed \$100 (some individual exceptions may apply).
- 4) Exemplary Great Lakes and marine curricula and resources
- 5) Opportunities to participate in additional COSEE Great Lakes-sponsored educational programs
- 6) Long-term support and communication between COSEE Great Lakes and the workshop participants.

