



## LAKE SUPERIOR SHIPBOARD SCIENCE PROFESSIONAL DEVELOPMENT OPPORTUNITY

For ten classroom teachers and informal educators

Join UMD Large Lakes Observatory (LLO) scientists to **see below the surface** of Lake Superior on the *R/V Blue Heron*

**WHEN?** October 8, 2018

**BUT I TEACH!** Some sub coverage available (see below)

**HOW TO APPLY?** Email Cindy Hagley, MN Sea Grant ([chagley@d.umn.edu](mailto:chagley@d.umn.edu))

**WHAT?** Have you ever heard of Lake Superior's "ring of fire?" Graduate student Kirsten Rhude and Dr. Bob Sterner of LLO invite you to participate in their research to better understand why this depth zone of Lake Superior is such a hotbed for *Diporeia*. This sediment-dwelling macroinvertebrate is a critical food source for Lake Superior native fish and is *disappearing* from many of the Great Lakes!

### TELL ME MORE!

This is **more** than just a fun, fascinating, maybe frigid day on the lake. The **"opportunity" includes:**

OCTOBER 7	Two-hour pre-cruise orientation and dinner
OCTOBER 8 SHIP DAY	Lake Superior hands-on research cruise and debriefing (sediment invertebrate and zooplankton collecting, water and sediment study)
NOVEMBER LAB DAY (date not set)	1. "Dig in" to Lake Superior invertebrate biology, water quality, and data analysis 2. Related classroom activities and standards 3. Help planning classroom applications
WINTER	Continued classroom and project support from scientists and outreach staff
SPRING (date not set)	Great Lakes Gathering – A chance for you and selected students to share what you've accomplished and learned

### WHAT WILL I LEARN?

- Designing research to answer a question
- Collecting, identifying, studying, and preserving aquatic organisms
- How to characterize different lake sediments and water quality; why differences matter
- Seasonal changes in Lake Superior
- How "small stuff" (plankton, sediment invertebrates) affects Lake Superior food webs and ecology
- Data collection, graphing, interpretation
- Making it work in the classroom

**Substitute teacher coverage**, access to **mini-grants**, and CEUs available. **Apply SOON** (by 9/28). MN and WI educators welcome.

Sponsored by the [Center for Great Lakes Literacy](#), [Minnesota Sea Grant](#), and UMD [Large Lakes Observatory](#).

