

**8<sup>TH</sup> BIENNIAL LAKE SUPERIOR YOUTH SYMPOSIUM**  
**at the College of St. Scholastica, Duluth, MN**  
**Thursday-Sunday, May 14-17, 2009**

For students & teachers (Grades 8-12) in Minnesota, Wisconsin, Michigan, and Ontario who live in or care about the watersheds of Lake Superior and the Great Lakes

Register on-line for the symposium at: [lakesuperioryouth.org](http://lakesuperioryouth.org)

*NEW!* We are offering a one day option on Friday, May 15<sup>th</sup> for students and their teachers that are unable to attend the entire symposium but would still like to learn about Lake Superior. It is called the Lake Superior Sampler and is available for \$12 a person and includes lunch.

**Greetings from the Symposium Coordinators**

The Lake Superior Youth Symposium Steering Committee welcomes you to the 8<sup>th</sup> Biennial Symposium on the campus of The College of St. Scholastica in Duluth Minnesota. Duluth is located in the westernmost part of Lake Superior, and boasts dramatic hills, over 50 local streams, large green spaces, and a rocky shoreline.

Lake Superior is truly an extraordinary place! The lake's pristine beauty and frigid waters inspire and awe residents and visitors alike. Equally special is the watershed, where forests, wetlands, lakes and bedrock cover the landscape and lively trout streams tumble toward the lake. Lake Superior contains one-tenth of the world's supply of fresh water, 95% of the United States' supply of fresh water, and one-half of all the water in the Great Lakes. It has the largest surface area of any freshwater lake in the world!

Despite its immense size, Lake Superior is surprisingly fragile. Today, algal blooms in bays, contaminated sediments in harbors, and the impact of global climate change looms large. Global Climate Change is a complicated issue. It has broad implications on the region's natural resources, its economy, and our health and welfare.

Together, as students, teachers, and citizens, let's address the issues and confront the challenges!

Symposium participants will attend presentations and field trips, listen to keynote speakers, and participate in a voyageur rendezvous. Students and teachers will be able to select the sessions they wish to attend on their registration form.

See you soon!

-Diane Podgornik, Proctor Schools, Proctor, Minnesota

-Brian Lokken, Upward Bound Math/Science, The College of St. Scholastica

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## **FOR MORE INFORMATION**

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Website: [lakesuperioryouth.org](http://lakesuperioryouth.org)

## **GENERAL INFORMATION**

### **STEERING COMMITTEE**

Pat Collins, Minnesota's Lake Superior Coastal Program, Two Harbors, MN

Lisa Fitzpatrick, University of MN, Duluth

Jean Goad, Minnesota Department of Natural Resources

Mindy Granley, University of MN-Duluth Sustainability Coordinator

Cindy Hagley, Minnesota Sea Grant, Duluth, MN

Shannon Judd, Fond du Lac Reservation, Environmental Program

Mike Kennedy, Minnesota Pollution Control Agency

Brian Lokken, Upward Bound Math/Science, The College of St. Scholastica

Margie Menzies, Harbor City International Charter School, Duluth, MN

Diane Podgornik, Proctor Schools, Proctor, MN

Amber Westerbur, City of Superior, Superior, WI

## **SYMPOSIUM FUNDERS**

Environmental Protection Agency  
Minnesota's Lake Superior Coastal Program, National Oceanic and Atmospheric Administration  
First National Bank of Proctor  
Proctor Moose Lodge #1302  
Two Harbors Moose Lodge #1463

## **PAST SYMPOSIUM HOSTS**

2007 Karen Bacula, Ron Strazzinski, and Holly Worschock, Marquette High School  
Ann Joyal, Seaborg Center, Northern Michigan University, Big Bay, Michigan

2005 Doug Jones and Sir Winston Churchill Collegiate and Vocational Institute, Thunder Bay, Ontario, Canada

2003 Steve Sandstrom and Sigurd Olson Environmental Institute, Northland College, Ashland, Wisconsin

2001 Joan Chadde and Shawn Oppliger, Center for Science, Mathematics & Environmental Education and  
Michigan Technological University, Houghton, Michigan

1999 Tom Berry, Great Lakes Aquarium, Duluth, Minnesota

1997 Ken & Myra Piirtoniemi, Marnie Lang, White Pines Collegiate & Vocational School, Sault Ste. Marie,  
Ontario

1995 Clayton Russell, Sigurd Olson Environmental Institute, Northland College, Ashland, WI

## **KEYNOTE SPEAKERS**

Dr. Jay Austin  
Large Lakes Observatory, University of Minnesota-Duluth  
Lake Superior: Canary in the Coalmine?

Summer water temperatures in Lake Superior are increasing faster than the regional climate – why is this? We will explore the role that winter ice plays in setting the stage for the rest of the year, some of the potential consequences of this warming, and the sort of research that we are doing to help us better understand this very complex system.

Mr. Glen Sorenson  
Proctor Schools Teacher, 2005 MN Teacher of the Year  
The Importance of Lifelong Learning

Glen Sorenson has been an inspirational science teacher and coach at Proctor Schools for many years. He is best known for his use of road kill. Not only is Glen an incredible teacher but he is also an avid arctic traveler. He will use his many life experiences in the classroom, the arctic, and in life to convey to us the importance of lifelong learning. It is a lesson that will not only make you think, but will

also make you laugh until you cry.

## **GUEST PRESENTERS**

### **Voyageur Rendezvous** by Mr. Dave Hanson

Come and join Dave Hanson and his fellow Voyageurs. They will be camping in their own Voyageur encampment on the campus of The College of St. Scholastica. Visit their camp to learn new crafts, start a fire the old fashioned way, play a Voyageur game or learn a new dance. They will be at the symposium both Friday and Saturday.

### **Lake Superior Clay Tile Project**

By Jamie Harvie, Institute for a Sustainable Future & Jill Jacoby from Sweetwater Alliance

After your learning adventures on Lake Superior have been complete, we have an art-based project to help conclude your time in Duluth. You will be supplied with a clay tile and asked to design that tile with art that captures an aspect of what you have learned while at the symposium. These tiles will be pieced together to form a mural that will speak to others about Lake Superior. That mural will be displayed in Duluth during Lake Superior Day on July 19, 2009.

### **Seasons of Lake Superior**

By Paul Sundberg, Nature Photographer

We will close our 8<sup>th</sup> Biennial Lake Superior Youth Symposium by experiencing the moods of Lake Superior in spring, summer, fall, and winter through the images and stories of photographer Paul Sundberg. Take a journey through the seasons to explore the spectacular landscapes and wildlife of Lake Superior.

## **ACCOMODATIONS**

All students and teachers will spend three nights in The College of St. Scholastica's dormitories, from Thursday, May 14, through Sunday, May 17, 2009. Meals will be provided in the dormitory from Thursday dinner through Sunday breakfast. Your registration fee will cover your meals, lodging, and all symposium programs.

## **WHAT TO BRING**

Bring casual clothes that are appropriate for a wide range of weather conditions-warm, cold, rainy, etc. Participants will need a pair of tennis shoes that can get wet for several field trips. Also, participants should bring a backpack for field trips containing a water bottle, rain gear, extra jacket, and snacks.

## FREQUENTLY ASKED QUESTIONS

*What kinds of sessions and presenters will there be?*

The symposium will offer field trips and presentations on a wide variety of topics. There will be something for everyone's interest! Sessions will cover Great Lakes history, conservation issues, regional geology, water quality of streams and lakes, forest ecology, student initiatives in a Great Lakes basin, the arts, and more! Presenters will be university faculty and graduate students, students, biologists, foresters, geologists, activists, artists, writers, and educators that represent a diversity of perspectives.

*How do I decide what to attend:*

Read through the descriptions and select topics from a variety of categories, so that you expose yourself to lots of different ideas and activities. Select a field trip topic that represents a career that you might be interested in. Choose presentations that will teach you something new.

*How do I register for my preferred sessions?*

After reading the descriptions of the field trips and presentations on the following pages, mark the field trips and presentations that you would be most interested in attending on your registration form. We will do our best to schedule you for your field trip and presentation selections. Since many of the field trips and presentations only allow 20 students per session, and most sessions will only be offered once or twice during the symposium, it won't be possible for everyone to receive all of their selections.

*Can I register on-line?*

Yes. Register on-line at: [lakesuperioryouth.org](http://lakesuperioryouth.org)

*Do participants have to attend the entire symposium?*

You will be able to choose between the one day Friday Lake Superior Sampler or the Thursday afternoon to Sunday morning Lake Superior Extravaganza. Yes, we want all students and their chaperones to attend the entire symposium program that they have signed up for. The symposium events are designed to build upon each other, providing a complete experience that you will remember for a long time. It is possible for teachers who are attending as individuals, and not chaperoning students, to register for the symposium, but not attend all of the events.

*Can students attend on their own?*

All students must come with a chaperone, a teacher, 4-H leader, scouting leader, parent, or other adult. One chaperone for every fifteen students is required.

*Do all students have to stay overnight?*

All students that have signed up for the full Lake Superior Extravaganza must stay in the dorms with their chaperones. Since programs will begin immediately after breakfast and run until 10 or 11 PM at night, it will be much safer, and a lot more fun, for students to stay in The College of St. Scholastica dormitories.

*What is expected of teachers/chaperones?*

Teacher/chaperones are expected to manage their group of students to ensure that students behave properly and attend programs on time. During the day, chaperones may participate in sessions of their

own choosing, since students will be in a supervised situation either on a field trip or in a presentation. We would like chaperones to attend field trips to help with supervision. You do not need to attend the same field trip as your students.

*Is in-service credit available for teachers/chaperones?*

Yes, teachers will receive a certificate of participation to receive in-service credit in their home district.

## **FIELD TRIP DESCRIPTIONS**

Field trips will take place Friday morning and Saturday afternoon. The field trips are 3 hours long and include a box lunch. Read the descriptions of the field trips to be offered. Mark your selections on your registration form. We will do our best to schedule you for your chosen selections. Lake Superior Sampler participants should make 5 choices from the Friday field trip offerings. Lake Superior Extravaganza participants should make 5 choices from the Friday field trip offerings and 5 choices from the Saturday field trip offerings.

### **FRIDAY FIELD TRIPS (3 hours long, Friday morning)**

1. ‘C’mon Board’: Go where few have gone as you tour two of the Great Lakes vessels, US Steel’s *William A. Irvin* and the research vessel *Blue Heron*. You’ll be amazed.
2. ‘After the Flush’: The Western Lake Superior Sanitary District’s regional wastewater treatment plant on Duluth’s waterfront treats nearly 40 million gallons of sewage from homes and businesses everyday. Learn just how they do it during this fascinating tour.
3. ‘Breaking Up Is Hard To Do’: About 1.1 billion years ago, the North American continent attempted to break apart - right here in Duluth! Come explore the signs of this violent time in Lake Superior’s geologic past.
4. ‘Trapped by Ice’: For nearly 65,000 years, glaciers covered the area. The ice may be gone, but there are remnants of this time in history everywhere! Check them out on this great trip.
5. ‘A Lazy Day on the Lester-Amity River System’: Lazy...I don’t think so! Work alongside scientists as they collect data on the biological, chemical, and physical characteristics of this outstanding river system.
6. ‘The St. Louis River: Duluth’s Other Waterfront’: Spend the morning walking a portion of the five-mile long Western Waterfront Trail and follow the River’s bays past cattail marshes that are prime habitat for waterfowl and other wildlife. There’ll be picture-taking opportunities around every bend and instructors to help you capture that perfect shot. Don’t forget your camera!
7. ‘Turning Out Trout’: Together, the Duluth Area Hatchery and the French River Coldwater Hatchery spawn and rear hundreds of thousands of kamloop and steelhead rainbow trout for Lake Superior and its tributaries. Learn all about the process first-hand during this exciting tour.
8. ‘Footprints in the Sand’: Feel the sand between your toes as you explore the longest freshwater sand spit in the world. Watch shorebirds, learn about unique beach grasses, and get an up close look at the sand dunes.
9. ‘Forecasting Frenzy’: Twenty-four hours a day, seven days a week, the National Weather Service’s office in Duluth provides up-to-the-minute weather, hydrologic, and climate forecasts and warnings for the region. Find out just how they do it during this exciting tour (hint: it doesn’t involve a crystal ball)!

10. 'Uncovered: The US EPA's Research Laboratory': Nestled along the rocky shores of Lake Superior is one of the Environmental Protection Agency's premiere research labs. During your tour, you'll meet world-renowned scientists and get a rare look at their research methods and materials.

11. 'Going Green': Being "green" is all the rage. Learn what's involved in "greening" up your life and see first-hand what others are doing, from installing solar panels to using wind turbines, to "green" up theirs.

12. 'Warbler Walk': Take a leisurely stroll along the Minnesota Point Pine Forest Scientific and Natural Area in search of warblers and other spring birds. Before setting out, you'll get an introduction to basic bird biology, identification and binocular use from a birding expert. Be prepared to be awed!

### **SATURDAY FIELD TRIPS (3 ½ Hours long, Sat. afternoon)**

13. 'Hittin' the Wall': Experience the thrill of rock climbing as you negotiate one of the area's best climbing walls. Hope you're not afraid of heights!

14. 'Geocaching 101': Be a part of the hot new sport of geocaching and discover hidden treasure buried around The College of St. Scholastica. You'll never know what you might find!

15. 'Set Sail': Feel the wind in your face and the cool spray of Lake Superior as you learn the fundamentals of sailing. You'll know the ropes in no time!

16. 'The Perfect Paddle': Grab a paddle, find your sprayskirt, and get ready to explore one of the area's beautiful lakes or bays by kayak. All abilities welcome.

17. 'Keep On Trekkin': Here's your chance to hike one of Duluth's amazing trails. Be prepared – the views are going to be spectacular!

18. 'Rollerblade the Munger': Lace up your skates, put on your helmet, and take off on a leisurely skate along the St. Louis River. Don't let this chance to see some cool things whiz you by!

19. 'Buckthorn Boot Camp': Join St. Scholastica's army in the fight against invasive buckthorn. Working together, we can beat this enemy!

20. 'Fish' in the Louie: Don't miss the chance to catch and release the 'big one' while fishing in the St. Louis River. Fishing stories welcome!

21. 'Trail Guardians': Volunteer a little of our time helping to maintain one of Duluth's beautiful trails. With a little hard work, it's amazing what can be accomplished!

22. 'Aquarium Adventures': Dive into the history, culture, and majesty of Lake Superior during your visit to the Great Lakes Aquarium. With so much to see and do, you'll be asking for more time to explore.

23. 'Wild About Wild Rice!': Students will travel to the Fond du Lac Reservation to visit a local wild rice lake, a traditional food resource for the Anishinabe people. Observe wild rice restoration efforts in action, and learn about the significance of water quality and other environmental factors in preserving healthy wild rice stands.

### **PRESENTATIONS**

24. Mining Impacts in the Great Lakes Regions: A Tribal Perspective

Tribes in Northeastern Minnesota are engaged in reviewing many large mine expansions and new mining projects in the Lake Superior Basin. We are concerned about significant loss of wetlands and forest cover, which provide habitat for important treaty-protected natural and cultural resources and sequester tons of carbon in the biosphere. We are also concerned about water quality and hydrology impacts from numerous existing and proposed mines within the St. Louis River/Lake Superior watershed.

#### 25. Living with Wildlife

Minnesota is teeming with wildlife. Whether it's a deer eating the tops of garden plants, a bear making a home under a porch, bats taking refuge in the attic, or geese eating the grass on the lakeshore, contact between wildlife and people increases as more people build homes and cabins and recreate in northern Minnesota. Learn how to live with and enjoy our wildlife neighbors.

#### 26. Global Warming and Climate Change

The Large Lakes Observatory in Duluth, MN has been researching global warming and climate change for many years. They will share their research findings from both the North American Great Lakes and the African Great Lakes.

#### 27. A Lake Superior Adventure of a Lifetime

In the summer of 2008, Alissa Weitz and Brian Castillo took a break from guiding sea kayak adventures in the Apostle Islands to fulfill a *superior* lifestyle on the big lake. With over ninety days of kayak bound travel the duo experienced their fair share of Superior's surly moods, gargantuan geology and cultural connections to the past. Join them for tales of brave beasts, wild weather and enticing exploration around the shores of Lake Superior.

#### 28. What do I do with all this stuff?

Have you ever thought about what happens to all the "stuff" that goes in your trash can or recycling bin? Find out the fate of your empty milk jugs, pizza boxes, and paper towels. You'll even get a chance to discover new ways to put those materials to better use.

#### 29. Go Fly a Kite!

Here is your chance to try your skills at building a kite while at the same time learning that clean air ensures high water quality. Hear about the 2009 Lake Superior Day celebration!

#### 30. Leaving No Trace in the Wilderness

Please join us to learn how you can travel into the wilderness without leaving a trace. You will get to visit a sample campsite to see how you can use our recreational lands responsibly.

#### 31. 1854 Treaty Authority: Tribal Resource Management and Implications of Climate Change

Hear about an overview of the 1854 Treaty Authority, including the exercise of treaty rights and natural resource management activities. Learn how our natural resources are being affected by climate change.

#### 32. Waste Vegetable Oil: An Alternative Fuel

Arne Vainio will show his retrofitted biodiesel automobiles and discuss the benefits from using "used French Fry grease" as fuel. His goal is to raise awareness of the importance of alternative energy. He has converted two of his vehicles to run on Waste Vegetable Oil. He has a 1983 Mercedes 300 TD Station Wagon with a 5 cylinder diesel engine. His other vehicle is a 1996 F250 Truck with a 7.3 diesel engine.

### 33. Common Sense Wilderness Survival and First Aid

This presentation will give the fundamentals of preventing, recognizing, and treating injury in a wilderness setting. Don't wait until it is too late!

### 34. Partnering the Environment and Academics on the Keweenaw: (P.E.A.K.): The Class Outside the Classroom

The P.E.A.K. class is a new interdisciplinary, project-based Science and English high school block class that involves unique outdoor tasks, a good deal of time outside and getting engaged in the local community; located on Lake Superior's shore (we can see the lake right from our backyard!), our year-long class learns sustainability and the preservation of our surroundings while being immersed in our biologically diverse environment.

### 35. Natural Art

Here is your opportunity to create an art project using natural materials from around the Lake Superior watershed. Be inspired!

### 36. Worm Watch

Did you know that earthworms are not native to our area? Did you know that you can be involved in a worm monitoring program? If not, come and hear about this exciting opportunity.

### 37. Flint Knapping

Our resident Voyageurs will demonstrate their art of flint knapping which involves shaping flint into arrowheads, knives, and other objects. This presentation will use flint from our area and show you the tools of the trade.

### 38. Blacksmithing over a Coal Fire

Meet in our Voyageur camp to see a demonstration of blacksmithing over a coal forge. They will be explaining and making different types of camping equipment. Hear about the blacksmith's role in the fur trade.

### 39. Drop Spinning

Spend some time with Stoni learning the art of spinning wool into yarn. She will be going through the process from raw wool using several different types of spinning techniques. You will like this one, she is very good!

### 40. Fur Trade – Life of a Voyageur

Come and chat with our Voyageurs. They will explain the history of the fur trade and bring fur for you to see and feel. This will be fun!

### 41. Fire Starting and Primitive Style Weaving

Meet in the Voyageur's camp to start your own fire using flint, steel, and a char cloth. With the right tools it is not as hard as it looks. Then weave a sash using your fingers.

### 42. Get off the Grid

It can be done, you can do it to. Learn how you can use renewable energy technology to produce your own electricity. Hear about how St. Louis County has been able to save money and the environment through their

energy conservation programs and renewable energy initiatives. They even installed a green roof.

#### 43. Digital Data

Spend your session on a computer trying out the cool hydrologic data available online at [LakeSuperiorStreams.org](http://LakeSuperiorStreams.org). Manipulate the variables to plot current and past river data.

#### 44. Trout in the City

The City of Duluth has 16 trout streams in town! Managing storm water in Duluth is critical to maintaining the high quality cold water necessary for the trout to survive. Learn about the trout streams and how we work together to protect them.

#### 45. Campus Sustainability Efforts at the University of Minnesota-Duluth

On a campus of over 12,500 people, together we can make a big difference to lessen our impact on natural resources. Learn how UMD is working to become a more sustainable campus through conserving energy and water, reducing waste, treating storm water runoff, and more. This is a two hour time block to allow time for walking.

#### 46. Forest Management

Do you know how climate change will affect our northern forests? This presentation will give information about what is needed to maintain a healthy forest, share information on forestry careers, and discuss forest land management.

#### 47. Vermicomposting

Join our Youth Advisory Committee as they discuss what they have learned about vermicomposting. They will teach you how you can make your own worm bin to start composting your food scraps.

#### 48. Model Student Group Presentations

Hear about the exciting projects that our model student groups are doing in their own communities. You may apply as a model student group to be a presenter and receive scholarship money or you can sign up to hear from these inspiring students and learn how you can also contribute to your community.

#### 49. Scientist Meet and Greet – for Teachers!

This is your chance to get to meet and talk with local scientists. Hear about their current research and ask them the questions that you always wished you had the chance to ask. Make connections for future projects in your classroom. Don't miss this opportunity! This session will last the entire workshop time on both Friday and Saturday. You may sign up for one or both sessions.

### **WANTED - MODEL STUDENTS GROUPS!**

The Lake Superior Youth Symposium Steering Committee is offering travel and registration stipends for 4 groups of students who have a special project that they would like to tell other students about at the symposium. The Committee believes one way to inspire students to become active stewards of Lake Superior and the Great Lakes is to have them learn from their peers. Students throughout the Lake Superior and Great Lakes watershed area are involved in many exciting and inspiring projects that we

would like Symposium participants to learn about! To encourage students groups to present, the Steering Committee is offering stipends of up to \$1000 per group to assist with registration and travel expenses for four groups of students from Michigan, Wisconsin, Minnesota, and Ontario to attend the symposium and tell others about this special project. Student groups receiving stipends are expected to provide a minimum of 25% of their registration and travel costs to attend the symposium, as a reflection of their commitment.

### **Selection Criteria**

Projects will be evaluated according to the following criteria.

Is/does the student project:

1. Designed and/or implemented by one or more students.
2. Demonstrate initiative, creativity, and commitment by students on behalf of environmental education, scientific research, and/or environmental protection.
3. Demonstrate collaboration with other students, classes and/or community members.
4. Has had a positive impact on the community and/or natural resources of Lake Superior or the Great Lakes watersheds.

Students who receive stipends must be prepared to conduct one 20-minute or one 45 minute presentation at the symposium telling other students about their project.

### **Application Due Date**

Student groups must postmark their model student group application by March 1<sup>st</sup>. The Symposium Steering Committee will notify selected groups by email or phone by March 15, 2009.

To apply to be a model student group, please provide the following information.

1. Write a paragraph or two to explain your student project.
2. How many students are involved in the project?
3. How many students would like to come to the symposium?
4. Tell us how your project would meet the selection criteria stated above.
5. Include your contact information (name, address, phone number, email)

\*\*This does not need to be a lengthy application. Try to limit your response to a paragraph for each question above. We are excited to hear about your projects!

Send by mail to: Diane Podgornik, Proctor Schools, 131 9<sup>th</sup> Ave., Proctor, MN 55810 USA  
or email to: [dpodgorn@proctor.k12.mn.us](mailto:dpodgorn@proctor.k12.mn.us))

### **STUDENT-CREATED PROJECTS**

Each Lake Superior Extravaganza student is asked to participate in one of these activities at the symposium. Lake Superior Sampler participants may also participant but it is not required. The students will make their presentations on Friday from 3:30-4:30. Please read the Student Project Guidelines in this booklet and check the space below next to the activity you will participate in.

Art Gallery - students showcase their photos, drawings, paintings or other art form related to Lake Superior.

Issues Forum - students choose one of the selected topics to research and present a poster display.

Scientific Research - individual, group, or class conducts research about Lake Superior and presents a poster display.

Poetry, Prose & Short-Stories - students write about their Lake Superior experiences, feelings, or imaginings.

## **STUDENT PROJECT GUIDELINES**

Each Lake Superior Extravaganza student is asked to come to the symposium prepared to participate in one of the projects described below. Lake Superior Sampler participants may also participate but it is not required. These projects provide a way for teachers to integrate their preparations for the symposium experience into their classroom curriculum.

Students will be displaying their work during the Student Presentation time on Friday, May 15<sup>th</sup> from 3:30-4:30. Students will be asked to stand by their projects during part of the time to answer questions. The rest of the time the students should be viewing other student projects.

### **ART GALLERY**

Artwork must be created by the student using Lake Superior or its watershed resources for inspiration. Students should only work from photographs if they have taken the photo themselves.

1) Acceptable media for artwork are: drawings, paintings, photographs, sculpture, or mixed media. Sculptural pieces may not be larger than 18"x18"x18".

2) Two-dimensional artwork must be matted, mounted, or framed with a hanging device already attached (i.e. the artwork should have a hook, wire, or string attached to the back).

3) Artwork must be clearly labeled with: first and last name, school, address, telephone number, title of artwork, and medium.

Students may present their position on a topic relating to the future of the Lake Superior or Great Lakes watersheds. Students may select their own topics. Students should present their information on a standard-size display board (32" high x 48" wide) that is free-standing. The display boards will be on display during the student presentation time.

Possible topics are:

Point and non-point source pollution

Green-belt zoning

Land-use planning

Toxic discharges (metals, pesticides, herbicides, industrial chemicals)

Diversion of Great Lakes water

Exotic species

Global Climate Change

Sport fisheries

Water-level fluctuations

On their display board, students should state the following:

1. *What is the problem/issue?*
2. *Why is this a problem/issue?*
3. *What are the different perspectives on this issue?*
4. *How does the student feel that this issue can be solved?*

## POETRY, PROSE & SHORT-STORY

Students may submit poetry, prose, or a story that relates to the Great Lakes/Lake Superior watershed, to share with other symposium participants. Students will be able to share their story during the student presentation time. You may have drawings/illustrations accompany your work. Bind your work together if it is longer than one page. If possible, provide a hard backing to the work to allow it to sit on an easel for display.

Write in one of the following genres:

### *Poetry*

Express a moment in nature, daily sights and occurrences, ideas and feelings with a poem. Describe a clear picture or a poignant moment with a form of poetry, haiku, free verse, diamante, acrostic, or windspark poem. The image and ideas are more important than the structure.

### *Prose*

Organize your thoughts on a particular aspect of the Great Lakes and submit your essay to share with others. Or you may submit a page or two from a nature journal or science log that you write and illustrate that contains your observations and perceptions about the nature environment.

### *Short-Story*

Write a story based on your own experiences with the Great Lakes. Imagine what it was like living near the Great Lakes one hundred years ago, or what it will be like to live here one hundred years from now. Stories should not exceed 5 pages, double spaced.

## SCIENTIFIC RESEARCH

This project option provides an opportunity for a student, group of students, or entire class of students to share their research, either in the field or the laboratory, on a particular topic related to Lake Superior or the Great Lakes. The display should be a presentation of the research process and findings.

### **Display Unit**

Projects should fit in a space enclosed by a standard-size display board (32" high x 48" wide) that is free-standing. The following information should be on the display unit and presented in a NEAT and CONCISE manner.

**Title:** Neatly lettered and easy-to-read.

**Name of Student(s), Grade, School, and School Address**

**Purpose:** The problem stated in the form of a question, with the independent and dependent variables identified. The dependent variable is the outcome or measure of change, and the independent variable is the variable that is changed by the experimenter and tested. For example, in a stream monitoring study, students could collect data on the diversity of stream macro invertebrates (dependent variable) collected at different habitats (independent variable) on the stream.

**Hypothesis:** An educated guess of how the experiment will turn out, worded in terms of the independent and dependent variable. For example, “the greatest diversity of stream macro invertebrates (or the greatest concentration of oxygen) will be found in a stream riffle habitat.”

**Materials list:** Complete list of materials used to conduct the experiment, including amounts.

**Procedure:** List of steps followed in conducting the experiment to test the hypothesis. The constant variables and control should be noted. Constant variables are conditions of the experiment that are kept the same. Control is a standard to test your experimental results against.

**Results:** What did the student(s) learn during and after their investigation. Photographs, charts, graphs, data or drawings that support the information in the project should be displayed.

**Conclusion:** A statement that summarizes the investigation and addresses the original purpose. It should include any discoveries that were not originally planned and a discussion of potential errors, plus a description of what one would do to extend, or improve on, this research project.

## SYMPOSIUM SCHEDULE

### Thursday, May 14<sup>th</sup>

4:00-6:00	Check-in for Lake Superior Extravaganza Participants
5:30-6:30	Dinner
6:30-7:15	Welcome from LSYS Steering Committee and the YAC (Youth Advisory Committee) Water Ceremony
7:15-8:00	Opening Address: Lake Superior: Canary in a Coalmine? Dr. Jay Austin, Great Lakes Observatory, Univ. of MN-Duluth
8:00-8:15	Break
8:15-9:00	Keynote Address: <i>The Importance of Lifelong Learning</i> by Glen Sorenson, 2005 Minnesota Teacher of the Year, Proctor Schools
9:00-11:00	Social Hour

### Friday, May 15<sup>th</sup>

7:30-9:00	Breakfast
8:00-9:00	Check-in for Lake Superior Sampler Participants
9:00-9:45	Opening Ceremony and Introductions
10:00-1:00	Field Trips (lunch in-route)
1:00-4:30	College and Career Fair
1:30-2:15	Presentation #1

2:30-3:15 Presentation #2  
3:30-4:30 Student Presentation Time  
4:30-5:00 Closing Ceremony for Lake Superior Sampler Participants  
5:00-6:00 Dinner  
6:00-9:00 Rendezvous

**Saturday, May 16<sup>th</sup>**

7:30-9:00 Breakfast  
9:00-9:45 Presentation #3  
10:00-10:45 Presentation #4  
11:00-11:45 Presentation #5  
12:15-4:45 Field Trips (lunch in-route)  
5:00-6:00 Dinner  
6:00-8:00 Lake Superior Clay Tile Project  
8:00-9:00 Rendezvous  
9:00-11:00 Dance

**Sunday, May 17<sup>th</sup>**

7:30-8:30 Breakfast  
8:30-9:30 Closing Program *Seasons of Lake Superior* by Paul Sundberg, Photographer  
9:30-10:00 Closing Ceremony  
10:00 Dismissal