



# 3 Sigma Institute

## 2014 Short Course Descriptions

### **Lake Ecosystem Ecology: Biological and Hydrologic Sustainability of Lake Ecosystems**

*Instructor: R. Kiesling, Ph.D., USGS; R. J. Garono, Ph.D., University of Minnesota*

Course Dates: August 11-15, 2014    Max 12 students  
Course Fees: \$1,200\*, \$460/1 Northland College Credit

The course will introduce students to the study of lakes as sentinel systems capable of tracking these types of environmental change along natural and human-produced gradients. Students will participate in the field collection and analysis of data from coastal Lake Superior, Lake Namekagon and other Chequamegon and Nicolet National Forest lakes as they help establish and maintain a regional network of sentinel lakes of climate change.

### **Engaging Students through Inquiry Science in an Outdoor Classroom**

*Instructor: B. Gienger, M.S.T., Assistant Director of Teacher Education, 3 Sigma Institute.*

Course Dates: August 9-13, 2014    Max 20 students  
Course Fees: \$1,200\*, \$460/1 Northland College Credit

Description: This course consists of two modules, a 2-day and a 3-day module. Students can also sign up for all 5 days. In this course, educators will work with our lead and each other to enrich their science curricula. Much of the workshop will involve authentic, hands-on science experiences with follow up discussions to facilitate knowledge transfer and help participants incorporate the scientific method into their classrooms. Topics will include: Climate Change, Invasive Species, Water Quality, and Coastal Land Margin Ecosystems.

### **Systems Dynamics Modeling for Complex Environmental Problems**

*Instructor: Elizabeth Allen, Ph.D. Candidate, Washington State University*

Course Dates: July 21-25, 2014    Max 15 students  
Course Fees: \$1,200\*, \$460/1 Northland College Credit

Description: Students will learn about the important role models play in understanding the environment and making policy decisions. They will get hands-on experience building system dynamics models of integrated systems and will explore how collaborative modeling might be used to support a decision-making process among stakeholders with diverse interests.

### **Part I: Functional Assessment of Wetland Food Web Support: Patterns in Primary and Secondary Production**

*Instructor: R. J. Garono, Ph.D.; University of Minnesota*

Course Dates: August 6-10, 2014    Max 20 students  
Course Fees: \$1,200\*, \$460/1 Northland College Credit

In this course, students will sample Lake Superior and inland lake emergent/submergent plant communities and the insect assemblages that those communities support. Students will compare multiple survey and collection techniques, construct and analyze data sets, and calculate and compare diversity indices. Students will compare community classification techniques to determine if wetland plant communities support characteristic invertebrate assemblages.

### **Registration**

To register and for more information go to [www.3sigmainstitute.org/projects/FL-summer-academy](http://www.3sigmainstitute.org/projects/FL-summer-academy) or call 541.757.7896.

### **\*Pricing**

Class prices listed are for room, board, and other associated fees. They do not include tuition. If students want Northland College credit there are additional fees of \$460 for 1 credit hour.

[www.northland.edu/forestlodge](http://www.northland.edu/forestlodge)

### **Meals and Accommodations**

Meals and accommodations will be nearby at Lakewoods Resort. Class prices are based on students sharing a room (i.e., double occupancy). Single rooms are available for an additional fee.

Meals will be prepared by the Lakewoods kitchen. Breakfast and dinner will be at Lakewoods Resort in a private dining area. Most lunches will be pack lunches in the field.

### **Classes and Classrooms**

This year, classes will be taught in rooms at Lakewoods (internet available), at Forest Lodge (if available), and outdoors. All classes are a combination of lecture and laboratory courses that meet from 08:00 to 18:00 each day. Field activities will take place upon or near the Forest Lodge Estate in the Chequamegon National Forest, or on Lake Namakagon

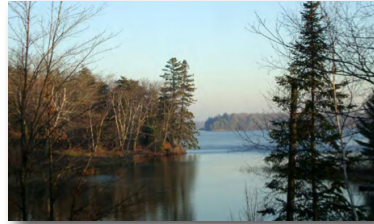
### **Other Amenities**

A few of the other amenities at the Lakewoods Resort include an outdoor pool, a golf course, walking trails, canoeing and fishing in Lake Namakagon.

[www.lakewoodsresort.com](http://www.lakewoodsresort.com)

## About Forest Lodge

The area surrounding Forest Lodge was logged in the late 1800s and was acquired by a wealthy St. Paul, MN businessman in 1902 to serve as a private wilderness retreat. During the next 15 years members of the businessman's family enlisted St. Paul architects, Edwin J. Lundie and Magnus Jemme, to develop a guest lodge, guest cottages, gardens, boathouse, and recreational areas on the property.



The 'Northwoods Wonderland Estate', as it was known, was used by multiple generations of the family until a significant portion (~800 acres) of the property was donated to the USFS in 1999. In 2002 buildings of Forest Lodge were designated as a National Historic Place and added to the National historic register. The final parcel (~100 ac) of the estate was left to the USFS in 2012.



In addition to the immediately adjacent forests, Summer Academy students will also have access to Lake Superior and the Chequamegon Bay about 45 min drive north, and to the St. Louis River Freshwater Estuary also about an hour drive.

## Only 1.5 hours from Duluth, MN

The USFS Forest Lodge Historic District is located on Lake Namakagon within the Chequamegon-Nicolet National Forest near Cable, WI. It is about a 1.5 hours drive from the Duluth airport. Forest Lodge boasts lake access and several private islands.



There are 15 buildings on the estate. The current USFS plan is to use the estate for research and educational purposes. The buildings will be available for classroom use during the summer of 2014 and dormitories and kitchen areas beginning



in 2015. Eventually, Forest Lodge will be able to accommodate 25-30 guests for multi-day classes, workshops, and research projects. We are planning to accommodate students at nearby campgrounds or lodges.

**For more information and to register**

[www.3sigmainstitute.org/projects/FL-summer-academy](http://www.3sigmainstitute.org/projects/FL-summer-academy)

3 Sigma Institute  
P. O. Box 2421  
Corvallis, Oregon 97339

541.757.7896



# Summer Academy

Earn College Credit

## Summer Field Courses

Held at the Historic Forest Lodge Estate in the Chequamegon-Nicolet National Forest in North Central Wisconsin

Find us on 



**3 Sigma**  
Forest Lodge

In affiliation with USFS and Northland College