

Education Materials for Summer 2016 Classes

at THE OHIO STATE UNIVERSITY'S

STONE LABORATORY

THE OHIO SEA GRANT COLLEGE PROGRAM



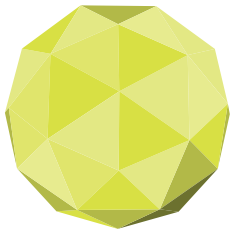
STONE LABORATORY

Ohio State's Island Campus on Lake Erie

Science from a
whole new angle.



stonelab.osu.edu



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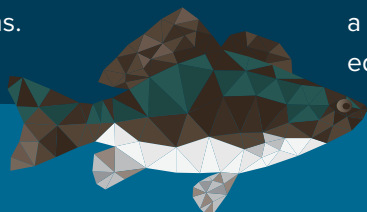
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For more than 100 years, Stone Laboratory has been an invaluable asset in freshwater biology research, science education and outreach. A freshwater fieldstation since 1895 and part of The Ohio State University since 1925, Stone Lab programs have introduced thousands – from elementary students to adults – to the basics of field-based biological science. Professional researchers from all over the Midwest work here helping to solve the most pressing issues facing the Great Lakes, such as invasive species and toxic algal blooms.

Stone Laboratory on Gibraltar Island, the South Bass Island Lighthouse and Aquatic Visitors Center in Put-in-Bay bring hands-on science and education to everyone who visits. In addition to field trips and guided tours to visitors, Stone Lab offers 25 college-credit science courses each summer, covering biology, geology and natural resources, among other topics. The island campus has also hosted conferences and educational programs for a variety of groups.

As Ohio State's island campus on Lake Erie, Stone Laboratory offers a powerful combination of science education and research.



A strong foundation

FOR THE NEXT GENERATION OF SCIENTISTS.



Stone Lab is the research station for the Ohio Sea Grant College Program – one of 33 NOAA Sea Grant programs dedicated to the protection and sustainable use of marine and Great Lakes resources.

The lab acts as the summer island campus on Lake Erie for The Ohio State University, offering 25 college credit courses and a variety of non-credit workshops each year to students from universities across the country. Gibraltar Island, just off the coast of South Bass Island, is a full-service campus with dormitories, a dining hall, classrooms, research laboratories, a library and a computer lab.

INTRODUCTORY COURSES



Two credits. One week. INVALUABLE LEARNING.



Introductory-level courses at Stone Lab give you the chance to get your feet wet – both literally and figuratively. High school sophomores, juniors and seniors can earn college credit to get a head start on a degree, and college students can earn general education credits.

You'll spend most of your time in the field – not a

classroom – while earning two semester credits in one week as you study biology, oceanography, ecology, plants, insects or even sport fishing. Field studies expand career choices for students with any major. You'll learn skills that translate to other fields, such as problem-solving, scientific analysis, data collection and presentation delivery.



COURSES

Sunday-Saturday. Open to high school sophomores, juniors and seniors and college students in any major. 2 credits.

June 12-18

Introduction to Biological Studies – Aquatic Biology
Ecology and Conservation of Birds
Field-Based Introduction to Oceanography
Lake Erie Sport Fishing

July 24-30

Introduction to Biological Studies – Aquatic Biology
Introduction to Biological Studies – Birds

July 31-August 6

Introduction to Biological Studies – Aquatic Biology
Introduction to Biological Studies – Local Plants
Introductory Insect Field Biology



INTRODUCTORY COURSES



FACULTY SPOTLIGHT

Dr. Justin Chaffin

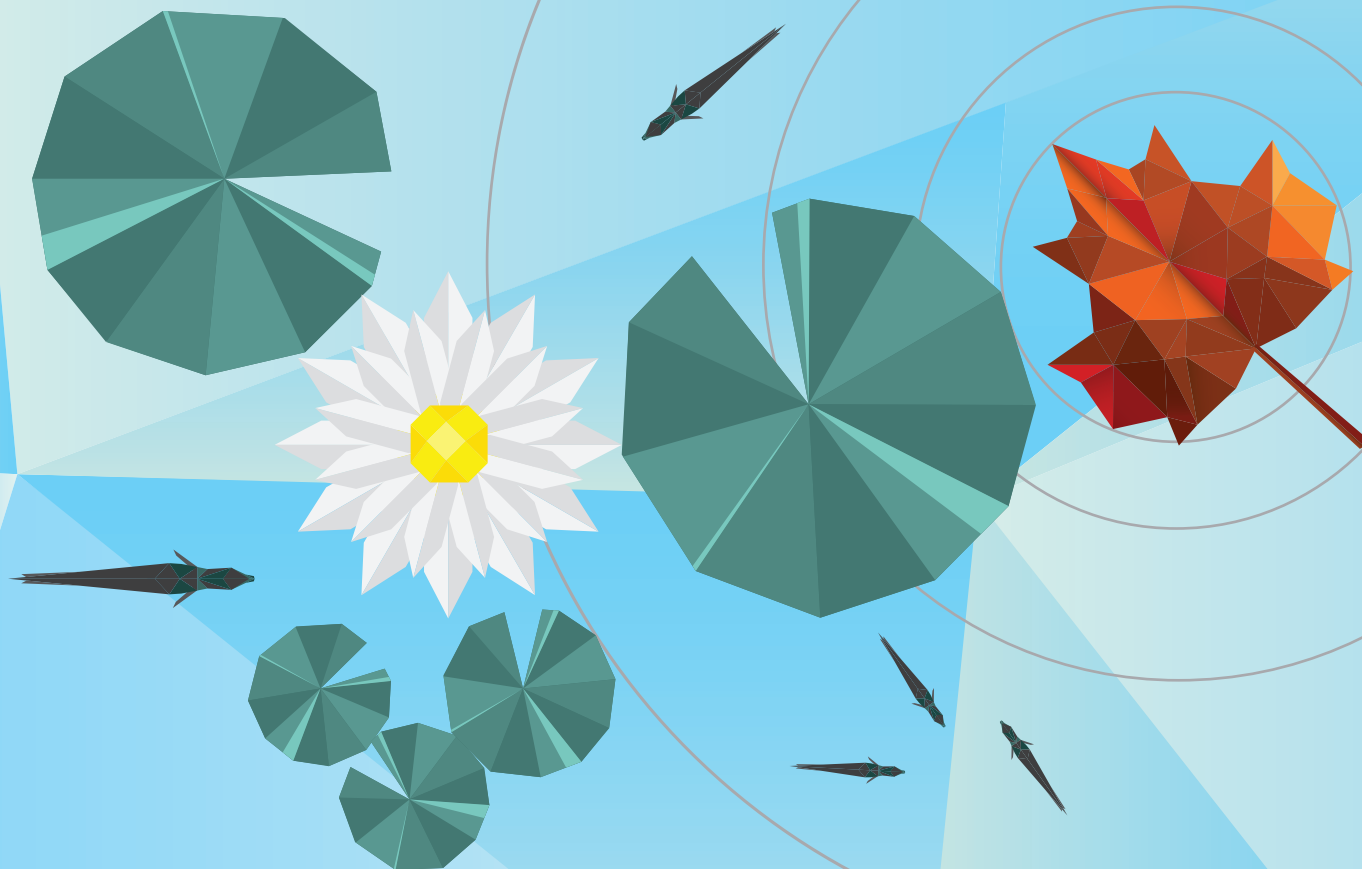
Stone Lab Research Coordinator

Introduction to Biological Studies – Aquatic Biology

“It’s much more hands-on than a regular high school classroom or even a typical introductory-level college class. The first-hand experience really helps students understand the material better. Students are on a field trip almost every day during class. We take trips on our large research boats. We go to the rivers on the mainland and we visit natural preserves. Students are much more enthused to be out in the field than in a classroom.”



UPPER-LEVEL COURSES



Your future in science takes shape.

You're a science major ready to dive deep into your chosen subject matter. We've got the courses you want to give you the knowledge you need for a future in your chosen career. Each course is an in-depth experience you'll share with a handful of classmates as dedicated to the subject as you are.

Ranging from a single day to five weeks, these classes give you the chance to practice scientific techniques in the field. At Stone Lab, the outdoors is your classroom and Lake Erie is your living laboratory. Whether you're studying biological sciences, education or natural resources, you'll gain invaluable skills and make lasting memories.



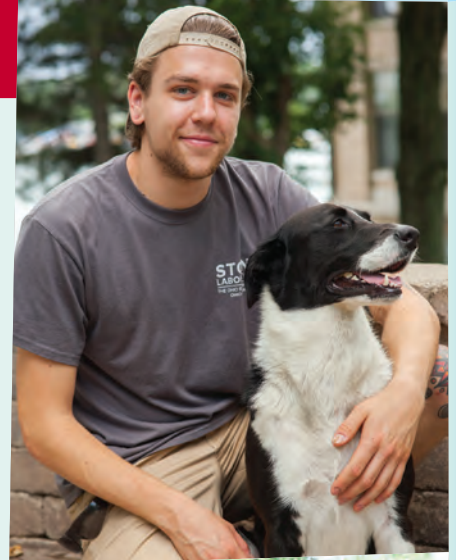
STUDENT SPOTLIGHT

Max Frankenberry

Junior, Evolution & Ecology major, The Ohio State University
Evolution, 2015

“The island itself is such a cool atmosphere because you have a group of people that are all extremely interested in the same things you’re interested in. You sit in the Dining Hall talking about an invasive species moving in for an hour. ... In terms of Ohio State campuses and programs, especially environmental sciences and evolution and ecology, this is definitely the best that it gets.”

See more of Max’s Stone Lab story at go.osu.edu/max.



COURSES

Open to college students studying biological sciences, education and natural resources as well as science teachers.

Five-Week Courses – 4 credits

Monday, Wednesday and Friday OR
Tuesday, Thursday and Saturday.

June 19-July 23

MWF

Behavioral Ecology
Evolution
Ichthyology

TRS

Aquatic Ecosystems –
Ecology of Inland Waters
Ecology
Field Zoology

One-Week Courses – 2 credits

Sunday-Saturday.

June 12-18

Field Herpetology

July 24-30

Field Ecology

July 31-August 6

Spider Biology

Other Courses

Thursdays, June 16-August 4, 1 credit

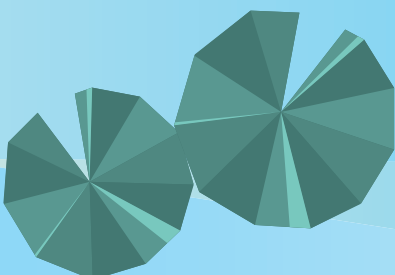
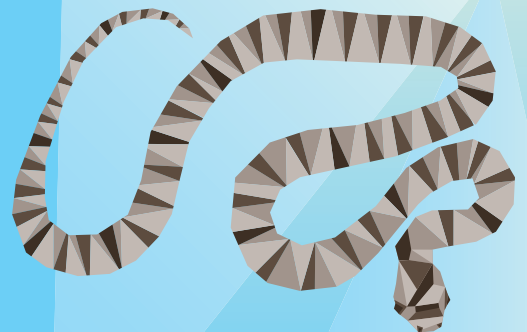
Current Topics in Environment
and Engineering
(Guest/Research Lecture)

August 8-9 or August 10-11, .5 credit

Algae Identification Workshop

August 4-19, 2 credits

Field Course: Environmental Science
on the Flagship *Brig Niagara*



Intense Research.

IMMEASURABLE REWARDS.

Our Research Experience for Undergraduates scholarship program offers an incomparable chance to live the life of a professional researcher while you study at Stone Lab.

Under the tutelage of top scientists, our REU students carry out independent research projects from start to finish, including specimen collection, data analysis and a final presentation. The five-week Stone Lab REU program runs

concurrently with our five-week term and must be paired with one of the five-week upper level courses (see page 7).

Stone Lab REU alumni have gone on to master's and PhD programs at colleges across the country and are working scientists in a host of fields.

The approximately ten students chosen for the REU program receive full tuition, room and meals.



STUDENT SPOTLIGHT

Jeffrey Hayes

Forestry, Fisheries and Wildlife major, The Ohio State University
Herpetology REU, 2015

"My project is related to the Lake Erie Watersnake, studying under Dr. Kristin Stanford. I think going into the future there have been a lot of experiences here that I can put on a resume – bird banding, fish seining, PIT tagging, mark-recapture. Those are all things that employers look for. I have a feeling it's going to work out great for me."

See more of Jeffrey's Stone Lab story at go.osu.edu/jeffry.

REU PROGRAM

**Summer 2016 REU Application Deadline:
February 18, 2016**

For more details visit stonelab.osu.edu/reu.

This year students will lead the following projects:

- Ecology of the round goby: analysis of the condition of this Western Lake Erie Basin invader (Ichthyology)
- Ecology and conservation issues in northern Ohio crayfish (Ecology)
- Survival of birds inhabiting the Lake Erie Islands (Ornithology)
- Fish investigations to inform fisheries management (Fisheries Research/Management)
- Exploration of Lake Erie nutrient loading, hypoxic events (the “dead zone”) and harmful algal blooms (Limnology)*

* Two of the four Limnology REUs will have the opportunity to work with Dr. Justin Chaffin, Ohio Sea Grant’s research coordinator, in the Stone Lab Water Quality Laboratory to extend their REU from 5 weeks to 8 weeks. These students will earn an additional credit hour, work full-time in the water quality lab, be paid an hourly salary for 20 hours/week and have their additional tuition and room and meals provided.





Gibraltar Island

Gibraltar got its name because of its resemblance to the famous British fortress at the western end of the Mediterranean Sea. The island's location at the entrance to Put-in-Bay Harbor allows it to serve as a natural breakwater to South Bass Island.



1 Bayview Office
Stone Lab's office on South Bass Island.

2 Peach Point Research Laboratory
Houses the Water Quality Laboratory, a bunkhouse, holding tanks for aquatic organisms and general field-support space.

3 Aquatic Visitors Center
Open June through August, this former fish hatchery has educational displays, aquaria filled with fish and a public fishing dock.

4 Peach Point Cottage and Sycamore Cottage
Staff and instructor housing.

5 Glacial Grooves
Deep striations, remnants of the last great North American glacier more than 10,000 years ago.

6 Solar Pavilion
Forty-four 240-watt solar panels provide energy and shade a few picnic tables below.

7 Stone Laboratory
The main instruction building on the island. Contains laboratories, classrooms, office space, a meeting room for special lectures, a library, a computer lab and the Stone Lab bookstore. Forty solar panels were added to the roof in 2013.

8 Main Dock
Students pick up the water taxi to South Bass Island here.

9 Dining Hall
Stone Lab staff caters all meals for summer courses, field trips and special events. Solar thermal installed on the roof in 2012 provides nearly all the hot water needed for the Dining Hall.

10 Gibraltar House
Housing for seasonal lab staff and researchers.

11 Research Buoy
This research buoy collects data including water temperature, Ph and pigment and transmits it live to the Stone Lab website.

12 Stone Cottage
Housing for instructors, visiting scientists, guests and seasonal staff members.

13 Harborview House
The main residence hall for students, featuring 12 five-person units with private bathrooms and a laundry room.

14 Barney Cottage
Student housing.

15 Cooke Castle
built in 1865 by Jay Cooke, a Civil War financier, this 15-room Victorian home is currently undergoing renovations.

16 Swimming Beach

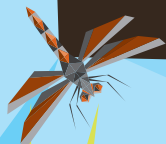
The building blocks of education.

Get up-to-date education techniques and information on Great Lakes issues with our courses designed specifically for teachers, informal educators and education majors with a rank of junior or above.

Earn continuing education units (CEUs) or credits toward your advanced degree. Each course features activities to engage your students in scientific discovery and learning. You'll

come back re-energized and with plenty of teaching strategies to introduce topics like climate, ecology and wildlife into your classroom.

Educators are eligible for tuition assistance and are encouraged to submit a scholarship application with their course application. Courses can be taken for credit or as non-credit workshops for CEUs.



PROFESSIONAL DEVELOPMENT FOR EDUCATORS



* Alphyll Scholarships established by Dr. Vic Mayer are available for educators taking these courses. For an application and more information, email Lawrence Krissek at krissek.1@osu.edu.

COURSES

Open to college students studying education and both formal and informal educators. 2 credits.

July 16-22

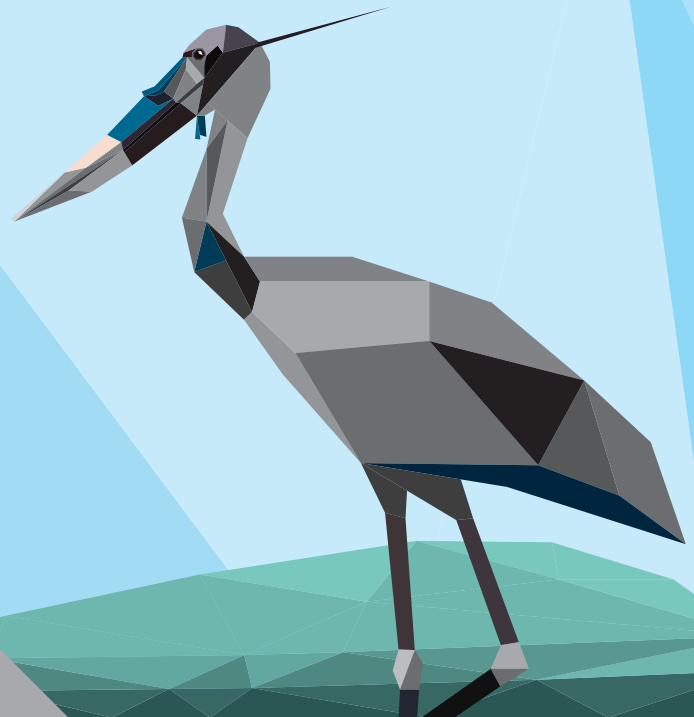
Field Geology for Educators:
Geologic Setting of Lake Erie*

July 24-30

Group Studies: Water and
Wildlife Training for Educators*
Field Ecology

July 31-August 6

Ornithology for Teachers



You want to come to Stone Lab. **WE WANT TO HELP.**



Each year, Stone Lab awards nearly 40 scholarships to students and educators with financial need and superior academic records. All those taking for-credit courses are eligible for scholarships ranging from \$200 to \$2,500 per application. The average scholarship last year for high school students was around

\$600, while undergraduate students were awarded an average of about \$1,200. You can apply for scholarships online during the Stone Lab application process. Initial scholarship recipients will be chosen by early April, though funds may still be available after the deadline.

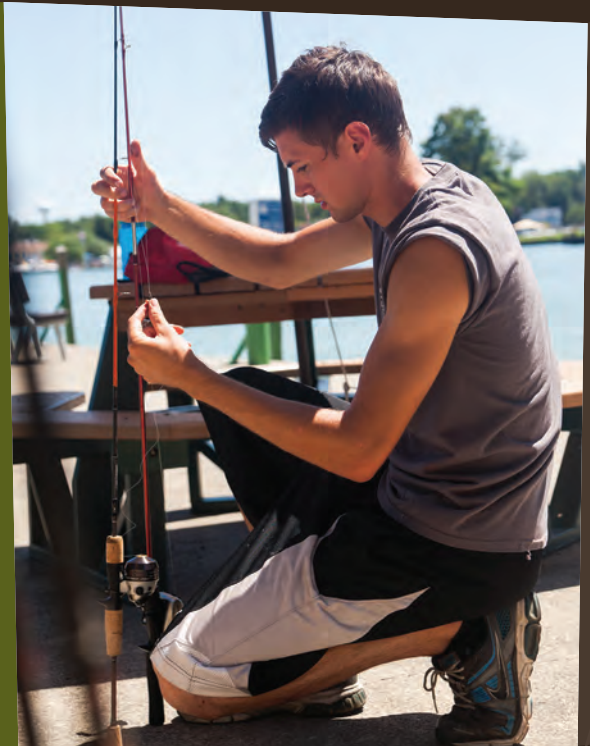
Strengthen your resume.

Earn while you learn. Students in five-week Stone Lab courses can apply for part-time positions to cover housing and meals during their stay. These student lab assistants may work with researchers, help run the Stone Lab shop, help in the dining hall, or assist with programming at the Aquatic Visitors Center and South Bass Island Lighthouse.

Full-time employment from April through October offers an hourly wage plus housing and most meals. Internship credit may also be available through

a student's home university. Biological field station assistants play an essential role in daily Stone Lab operations, from leading public tours to helping with meal preparation for students and guests. Full-time research assistants work with Stone Lab scientists.

More information and application materials are available at stonelab.osu.edu. All job applications must be received by **March 6**. Interviews will be held March 15-17 at the Stone Lab Columbus office.



Study at Stone Lab.



**FOR APPLICATION DETAILS AND DEADLINES,
VISIT STONELAB.OSU.EDU/APPLYNOW.**



SUMMER 2016 TUITION

Undergraduate*

Credit Hours	Resident Total	Non-Res Total
0.0-0.5	\$198.75	\$559.75
1.0	\$397.50	\$1,119.50
2.0	\$795.00	\$2,239.00
3.0	\$1,192.50	\$3,358.50
4.0	\$1,590.00	\$4,478.00
5.0	\$1,987.50	\$5,597.50
6.0	\$2,385.00	\$6,717.00
7.0	\$2,782.50	\$7,836.50
8.0	\$3,180.00	\$8,956.00
9.0	\$3,577.50	\$10,075.50
10.0	\$3,975.00	\$11,195.00
11.0	\$4,372.50	\$12,314.50
12.0-18.0	\$4,770.00	\$13,434.00

*includes all high school students

Most courses charge an additional lab fee per course.
Tuition numbers are estimates. All costs are subject to change.

For fees, room & meal costs and updated information, visit stonelab.osu.edu.

Graduate

Credit Hours	Resident Total	Non-Res Total
0.0-0.5	\$372.75	\$981.25
1.0	\$745.50	\$1,962.50
2.0	\$1,491.00	\$3,925.00
3.0	\$2,236.50	\$5,887.50
4.0	\$2,982.00	\$7,850.00
5.0	\$3,727.50	\$9,812.50
6.0	\$4,473.00	\$11,775.00
7.0	\$5,218.50	\$13,737.50
8.0 +	\$5,964.00	\$15,700.00

F.T. Stone Laboratory
1314 Kinnear Road, Area 100
Columbus OH 43212-1156
614-292-8949
stonelab@osu.edu

RESEARCH FACILITIES


Your home for Great Lakes research.

Scientists have been conducting research on Lake Erie and the Great Lakes at Stone Lab for more than 120 years. The laboratory's unique location and well-stocked facilities make it a popular destination for researchers from all over North America. Approximately 50 scientists use Stone Lab facilities each year.

AVAILABLE EQUIPMENT

- two remotely operated vehicles
- dive equipment
- flow-through aquaria with lake water
- 10-gallon aquaria
- chemistry equipment and bench space
- two underwater cameras
- wire tagger
- telemetry gear
- benthic sampling equipment
- water-quality sondes
- a variety of nets





The Water Quality Laboratory, which opened in 2013, allows researchers to identify plankton, measure chlorophyll content and cyanobacteria toxins, analyze organic and inorganic suspended solids, and test for nutrients such as phosphorus and nitrogen. These tests enable scientists to tackle the issue of nutrient loading and harmful algal blooms in Lake Erie better than ever before.



LAB EQUIPMENT INCLUDES:

- high-speed centrifuge
- spectrophotometers
- sonicator
- -80C freezer
- temperature- and light-controlled incubators
- 96-well plate reader
- micropipettors ranging from 0.2 microliters to 10 milliliters
- automated nutrient analyzer
- flow-through microscope

In addition, the lab has several research boats, including larger vessels such as:

- **R/V Gibraltar III**, a 42-foot research vessel for open-lake sampling and trawling
- **M/V BioLab**, a 37-foot trap-net style vessel for open-lake sampling and trawling
- **R/V Erie Monitor**, a 25-foot research vessel ideal for scuba, towing underwater equipment and small sampling equipment

Stone Lab has two cottages near the research laboratory on South Bass Island for visiting researchers who are planning overnight stays. Housing is also available on Gibraltar Island and in the Aquatic Visitors Center.

For more information or to arrange use of the facility or equipment, contact Research Coordinator Justin Chaffin at chaffin.46@osu.edu.

Get messy.

Bring your class to Stone Lab and bring science to life. Students in grades 5-12, college students and groups of adults can make reservations for field trips in April, May, early June, August, September and October. Half-day AVC Adventure field trips are available on Mondays and Tuesdays from June through August.

While at Stone Lab, each group spends two hours aboard a

Lake Erie research vessel, collecting environmental and biological data. Afterward, they return to Gibraltar Island, where they don lab coats to dissect fish and examine the lake's microorganisms through microscopes.

Groups can choose from up to 10 additional specialized activities to create a one-day trip lasting up to eight hours or a two-day overnight trip which includes a stay at the

island dormitory and meals at the Dining Hall. Field trips can accommodate up to 80 people.

Available activities for school-year field trips: Invertebrate Collection Walk, Exotic Species Slide Show, Insect Collecting, Island Geology Tour, Herpetology Overview, Ornithology Hike, Fish Seining, Climate Expedition, and Aquatic Visitors Center.



PLAN YOUR FIELD TRIP AT
stonelab.osu.edu/tripsandtours.



AVC ADVENTURES

Can't bring your group for a visit during the school year? AVC Adventures are four-hour summer field trips for up to 30 people and are held at the Aquatic Visitors Center, just a short walk from downtown Put-in-Bay on South Bass Island. Choose up to four one-hour activities from the following: Erie Island Cruise, AVC Tour & Fishing Fun, Birds for Beginners, Water Quality Walk, Ins and Outs of Lake Erie, Reptiles & Amphibians.

A unique location.



Hold your next event, conference or meeting at Stone Laboratory.

Secluded meeting spaces on Gibraltar Island and at the South Bass Island Lighthouse offer spectacular views of Lake Erie. Stone Lab staff can help you incorporate field trip activities such as a sampling trip on a research vessel, historical tours and other team-building activities.

Stone Lab can accommodate 50-75 people with a

conference room that can be set in classroom, theater or U-shaped styles. We also offer indoor and outdoor reception facilities.

Dormitory-style double rooms accommodate up to 40 people for overnight stays. A full-service dining hall provides meals and breaks for guests, if desired.

The South Bass Island Lighthouse offers meeting space and reception facilities for groups of up to 10 people.

A kitchen, living room and two porches provide comfortable living space for guests.

Presentation support includes:

- Computer and projector with audio
- High-speed wireless internet
- Teleconferencing/web conferencing
- TV displays

For more information, contact Kelly Dress, 419-285-1800, or email dress.3@osu.edu or stanford.147@osu.edu.



Stone Lab has hosted groups such as Girl Scouts of the USA, 4-H camps, The Nature Conservancy and The Ohio State University Comprehensive Cancer Center.

PUBLIC TOURS AND EVENTS

Educating the public on Lake Erie history and current issues

The **Aquatic Visitors Center** gives people of all ages a chance to examine Lake Erie's ecosystem up close. Children under 16 can borrow fishing gear and fish for free off our dock. AVC tours are free and open to the public from 10 a.m.-5 p.m. Wednesdays through Saturdays June 22 through September 10, 2016.

go.osu.edu/aquatic

The **South Bass Island Lighthouse** is open from 11 a.m. to 5 p.m. on Mondays and Tuesdays June 20 through August 9, 2016. Visit during these hours to learn the history of the lighthouse or arrange a scheduled tour April through November. The lighthouse grounds are open to the public from dawn to dusk daily.

go.osu.edu/lighthouse

Gibraltar Island tours are available from 11 a.m. to 1 p.m. Wednesdays June 22 through August 10, 2016 for up to 75 people on a first-come, first-served basis. Groups tour the island, including Perry's Lookout, the glacial grooves and Cooke Castle before learning more about Stone Lab research.

go.osu.edu/gibtours



Friends of Stone Laboratory (FOSL) Open House
Saturday, September 10, 2016



Established in 1895, Stone Laboratory is the oldest freshwater biological field station in the United States. The lab is the summer island campus on Lake Erie for The Ohio State University, offering 25 college credit courses and a variety of non-credit workshops each year to students from universities across the country.

When you study at Stone Lab, Lake Erie is your classroom and your laboratory. Each course is hands-on,

designed to give you invaluable real-world experience in the sciences.

Stone Lab programs have introduced thousands – from elementary students to adults – to the basics of field-based biological science. Professional researchers from all over the Midwest work here helping to solve the most pressing issues facing the Great Lakes, such as invasive species and toxic algal blooms.

OHSU-SLC-1579



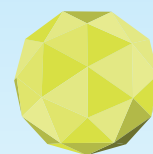
THE OHIO STATE UNIVERSITY

Ohio Sea Grant and Stone Laboratory
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Columbus, OH 43212-1156

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STONE LABORATORY

Ohio State's Island Campus on Lake Erie



2016 COURSE OFFERINGS

STONE LABORATORY Summer Courses 2016

Stone Lab offers one-day, two-day, one-week or five-week science courses as well as the five-week Research Experience for Undergraduates Scholarship Program. Any course can also be taken as a non-credit workshop (see requirements below). Detailed course descriptions can be found online at stonelab.osu.edu.

Introductory Courses – 2 credits

Run Sunday-Saturday and are open to advanced high school and current college students.

June 12-18

- ENR 2360 Ecology and Conservation of Birds
- EARTHSC 1107 Field-Based Introduction to Oceanography
- EEOB 1930 Introduction to Biological Studies – Aquatic Biology
- KNSHP 1140.05 Lake Erie Sport Fishing

July 24-30

- EEOB 1930 Introduction to Biological Studies – Aquatic Biology
- EEOB 1920 Introduction to Biological Studies – Birds

July 31-August 6

- EEOB 1930 Introduction to Biological Studies – Aquatic Biology
- EEOB 1910 Introduction to Biological Studies – Local Plants
- ENTMLGY 1260 Introductory Insect Field Biology



Upper-Level Courses

Open to college students who are studying biological sciences, education and natural resources as well as science teachers.

Five-Week Courses – June 19-July 23, 4 credits

- EEOB 5420 Aquatic Ecosystems – Ecology of Inland Waters (TRS)
- EEOB 3420 Behavioral Ecology (MWF)
- EEOB 3410 Ecology (TRS)
- EEOB 3310 Evolution (MWF)
- EEOB 5940 Field Zoology (TRS)
- EEOB 5930 Ichthyology (MWF)

One-Week Courses – 2 credits

- June 12-18**
EEOB 5910 Field Herpetology
- July 24-30**
EEOB 4950 Field Ecology
- July 31-August 6**
EEOB 5210 Spider Biology



Other Courses

Thursdays June 16-August 4, 1 credit

- ENR 5699 Current Topics in Environment and Engineering (Guest/Research Lecture)

June 26, .5 credit

- EEOB 5970 Larval Fish Identification Workshop

August 4-19, 2 credits

- EEOB 3189 Field Course: Environmental Science on the Flagship *Brig Niagara*

August 8-9 or August 10-11, .5 credit

- EEOB 5950 Algae Identification Workshop

Non-Credit Workshops

One- to three-day courses open to the public. Participants must be at least 18 years of age and have completed high school.

June 25

- Fish Aging Workshop

June 26

- Larval Fish Identification Workshop

July 9

- Fisheries Fundamentals Workshop

August 8-9 or August 10-11

- Algae Identification Workshop

August 8-9 or August 10-11

- Dealing with Cyanobacteria, Algal Toxins and Taste & Odor Compounds

August 15-17

- Aquatic Invasive Species – Hazard Analysis and Critical Control Point (AIS-HACCP)

August 19-21

- Outdoor Photography Workshop

September 23-25

- Lake Erie Sport Fishing Workshop

September 24-25

- Fish-Sampling Techniques Workshop

Courses for Educators – 2 credits

One week. Open to education students and both formal and informal educators.

July 16-22

- EARTHSC 5189.05 Field Geology for Educators: Geologic Setting of Lake Erie

July 24-30

- ENR 5194 Group Studies: Water and Wildlife Training for Educators
- EEOB 4950 Field Ecology

July 31-August 6

- EEOB 4920 Ornithology for Teachers

REU Program

Stone Lab's five-week Research Experience for Undergraduates (REU) Scholarship Program must be paired with one of the five-week upper-level courses. Students spend non-class days working with research supervisors, collecting data, analyzing discoveries and preparing a final presentation.

- Ecology of the round goby: analysis of the condition of this Western Lake Erie Basin invader (Ichthyology)
- Ecology and conservation issues in northern Ohio crayfish (Ecology)
- Survival of birds inhabiting the Lake Erie Islands (Ornithology)
- Fish investigations to inform fisheries management (Fisheries Research/Management)
- Exploration of Lake Erie nutrient loading, hypoxic events (the "dead zone") and harmful algal blooms (Limnology)

Tuition Assistance and Jobs

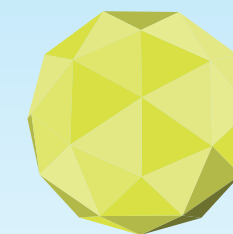
All students taking for-credit courses are eligible for scholarship funds. The average award for high school students in 2015 was around \$600, while undergraduate students were awarded an average of about \$1,200. Students enrolled in five-week courses can also apply for part-time jobs at Stone Lab to cover the cost of room and meals.



Course credits are based on the Ohio State University semester credit system and are transferable to most colleges and universities.

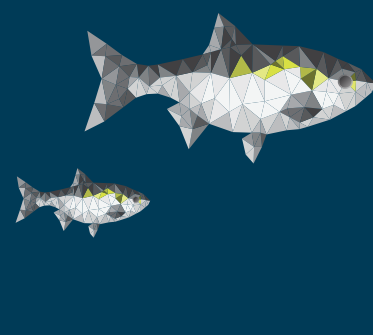
STONE LABORATORY

Ohio State's Island Campus on Lake Erie



SCIENCE

*from a
whole
new
angle.*



stonelab.osu.edu

STONE LABORATORY

Ohio State's Island Campus on Lake Erie

Where your future in
science takes shape.



stonelab.osu.edu



SCIENCE COURSES FOR STUDENTS IN ANY MAJOR.



APPLY TODAY AT
stonelab.osu.edu



OHSU-SLC-1628

STONE LABORATORY 2016

Ohio State's Island Campus on Lake Erie



Part-Time Student Employment at Stone Lab

*Get free room and board while you
take summer courses!*

Salary: Housing and some meals included
Location: F.T. Stone Laboratory, Put-in-Bay, Ohio
Dates: June 19-July 23, 2016

INFORMATION

For additional information, please contact
Stone Lab Manager Matt Thomas at
thomas.347@osu.edu or call 419-285-1800.

TO APPLY

Submit the application at:
stonelab.osu.edu/applynow.

Applicants must also submit a:

- Brief cover letter
- Resume
- Stone Lab Course Application

All application materials must be received
by 5 p.m. ET on March 6, 2016. Interviews
for employment will be held March 15-17,
2016 in Columbus, and decisions will be
made by the end of March.

SUMMARY OF DUTIES

These part-time positions are available to college-level students enrolled in a five-week course at Stone Lab. Laboratory assistants will help with the daily operations of the lab, including housekeeping and kitchen duties, as well as assist with tours at the Aquatic Visitors Center and South Bass Island Lighthouse. They will also handle library materials, help patrons and assist in the operation of the Stone Lab bookstore. Students serving in these positions may be subject to a security check.

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STONE LABORATORY

Ohio State's Island Campus on Lake Erie

Lake Erie Science Field Trip Program



Bring science to life for your students.

Take your class on a Lake Erie Science Field Trip to Stone Lab or on an AVC Adventure at the Aquatic Visitors Center at Put-in-Bay, available for students in grades 5-12 and for groups of adults.

Field trips are held in April, May, early June, August, September and October. Half-day AVC Adventure field trips are available on Mondays and Tuesdays from June through August.

During the school year, each group spends two hours aboard a Lake Erie research vessel, collecting environmental and biological data. The students return to the island where they don lab coats to dissect fish and examine the lake's microorganisms through microscopes.

Groups can choose from up to 10 additional specialized activities to create a one-day trip lasting up to eight hours

or a two-day overnight trip which includes a stay at the island dormitory and meals at the Dining Hall. Field trips can accommodate a minimum of 10 people up to a maximum of 80 people for a day trip.

All field experiences are aligned with Ohio's Science Academic Content Standards. Visit go.osu.edu/fieldtrips for more information.



STONE LAB'S LAKE ERIE SCIENCE FIELD TRIPS

Your visit includes lunch in the Stone Lab Dining Hall and the following core activities:



Lake Erie Science Cruise: On a research boat, students do the hands-on work of a scientist, measuring current environmental conditions such as wind speed and direction, water depth, temperature, oxygen content, wave heights and sunlight intensity. They also have the opportunity to determine water clarity, collect algae and zooplankton, survey benthic macroinvertebrates, and collect and observe Lake Erie fish.

Laboratory Practice: Groups take their samples from the Science Cruise into the research building for the Plankton and Fish Labs. These labs start with a limnology overview, including a discussion of geology, chemistry, physics and biology of aquatic ecosystems, food pyramids, and the examination of live phytoplankton and zooplankton under compound microscopes. Students also learn fish identification techniques. The session ends with a fish dissection to examine internal organs, stomach contents and parasites and/or diseases.



ADDITIONAL OPTIONS

To enhance your students' learning experience, other activities may be added from the list below:

INVERTEBRATE COLLECTION WALK

Learn to use "biological indicators" by collecting macroinvertebrates on Gibraltar Island's Alligator Bar, a rocky shoal, using kick seines, dip nets and direct observations. Students examine specimens under a dissecting scope, and then a score is calculated to determine local water quality.

EXOTIC SPECIES SLIDE SHOW

Discuss invasive plants and animals and their impacts on Lake Erie's ecosystem and view specimens of several common exotic species now found in North America.

INSECT COLLECTING

Get an introduction to the world of insects using diagrams and specimens, then take a peek at live subjects up close and personal using aerial nets and other techniques to capture some of Gibraltar Island's six-legged residents.

ISLAND GEOLOGY WALK AND TALK

Take a walk around Gibraltar Island to see evidence of the area's ancient history through embedded fossils, rock formations and glacial grooves, then discuss it in a short classroom session.

HERPETOLOGY

See live and preserved specimens and photos of a variety of Ohio's reptiles and amphibians and learn about current snake research underway at Stone Lab, which has been featured on the Discovery Channel's "Dirty Jobs."

ORNITHOLOGY HIKE

See a large variety of museum specimens, then hike around Gibraltar with a set of binoculars to spot and learn about Western Lake Erie's local bird life and its world-wide importance as a migratory flyway corridor.

FISH SEINING

Experience a fish sampling technique different from the trawl on the Science Cruise. Use different types of seines to net small fish in the shallow waters off the dock, and then use dichotomous keys to identify the catch.

CLIMATE EXPEDITION

Explore Gibraltar Island while learning about climate change, its effects on Lake Erie, and how small changes can have big impacts on the world. This activity explains the impacts of climate change in the Great Lakes first-hand while visiting island locations.

AQUATIC VISITORS CENTER (AVC)

Participate in hands-on science activities and learn how to fish at the Aquatic Visitors Center on South Bass Island. Activities include inspecting Lake Erie's complex ecosystem through hands-on displays, observing and identifying live fish in aquaria, and learning about current research projects that help protect Lake Erie.

AVC ADVENTURES

AVC Adventures are four-hour summer field trips for up to 30 people and are held at the Aquatic Visitor Center, just a short walk from downtown Put-in-Bay on South Bass Island. Choose up to four one-hour activities from the following: Erie Island Cruise, AVC Tour & Fishing Fun, Birds for Beginners, Water Quality Walk, Ins and Outs of Lake Erie, Reptiles & Amphibians.



TRANSPORTATION

Groups are responsible for arranging their own transportation to and from the mainland to South Bass Island via ferry on the Miller Boat Line (800-500-2421) or the Jet Express (800-245-1538). On South Bass, groups must travel from the ferry docks to Stone Lab's research dock, which can be arranged with the Island Transportation Company (419-285-4855). Group discounts are available.

To ensure transportation, it is important that participants arrive on time and adhere closely to research vessel and science cruise schedules while on the island.

Maps, directions and additional transportation information can be found at stonelab.osu.edu/maps.

HOUSING

Two-day field trips are available. All groups participating in two-day field trips are housed overnight on the island at the Harborview House dormitory, a 12-unit, heated building that can hold a maximum of 60 people. Rooms include bunk beds and a desk. Linens, towels, pillows and blankets are not provided. Overflow housing for larger groups is assigned to Barney Cottage, which is not heated. For more about our buildings, visit stonelab.osu.edu/explore.

MEALS

Groups spending one day at Stone Lab receive lunch in the Dining Hall, while those groups staying overnight are served dinner, breakfast and lunch. All meals are served in the Dining Hall. Individuals with serious food allergies or special dietary restrictions should plan to pack their own food. AVC Adventures do not include meals.

CHAPERONES

Chaperones are there to ensure the group adheres to Stone Laboratory's behavioral code of conduct. Each group should include two adult chaperones for every 15 participants in attendance.

COST AND REGISTRATION

To estimate cost for your group, visit go.osu.edu/fieldtrips. Once your costs are estimated, you can then fill out the online registration form and request two or three potential dates. Groups are placed on a first come, first served basis. Registration requests can be placed at any time, but we recommend that you place requests as soon as possible for the best chance to secure your preferred dates.

Groups are not officially registered until they receive confirmation from Stone Lab staff, at which time a down payment of 10 percent is required to hold the date. The initial assignment of dates for each year will begin in January, and

groups will not receive confirmation until that time. If your total attendance number changes following confirmation, the Stone Lab office must be notified at least three business days prior to your workshop date for billing to be adjusted.

If you do not have internet access, call the Stone Lab office at 419-285-1800, and a staff member will be happy to help you complete the form. Casual phone conversations or personal email messages cannot be substituted for submitting the online registration form.

Did you miss the first round of scheduling? Dates may still be available at any time during the calendar year, so go ahead and register!



**QUESTIONS? TWEET US @STONELAB
go.osu.edu/fieldtrips**

STONE LABORATORY 2016

Ohio State's Island Campus on Lake Erie



INSTRUCTOR/INFORMATION

For additional information, please contact Bill Edwards, Director, Environmental Studies Program and Professor of Biology, Niagara University
wje@niagara.edu

REGISTRATION

Applications are open through March 15, 2016 on a first-come, first-served basis.

Cost: \$1,500 (includes all room and meals) in addition to tuition at institution of record. This course is not eligible for Stone Lab scholarships.

The Ohio State University is offering this EEOB 3189 course for two semester credit hours.

TO APPLY visit stonelab.osu.edu.

Field Course: Environmental Science on the *Brig Niagara*

EEOB 3189 AUGUST 4-21, 2016*

Live and study aboard one of the largest tall ships in North America during this course covering Great Lakes earth and marine science, along with environmental policy. The *Brig Niagara*, a replica of Commodore Oliver Hazard Perry's flagship from the Battle of Lake Erie during the War of 1812, will take you on a trip across the Great Lakes, starting at Green Bay, Wisc. and ending in Duluth, Minn. Students will experience the visited ecosystems first hand: expect to get wet, encounter wildlife and get dirty! Much of this course includes sailing the ship, water sampling, marine archaeology, fish trawling and dissections and a general close up on how lake science and ship handling works. While previous sailing experience is not required, students will be expected to help sail the ship (within their level of comfort).



This course is a partnership between Niagara University, Lockhaven University, Fredonia State University and The Ohio State University's Stone Laboratory, but is open to applications from students at any university. Ohio State will be offering the course as field experience for undergraduate students. The course is graded satisfactory/unsatisfactory.

**Course ending date may change due to wind and weather*



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STONE LABORATORY 2016

Ohio State's Island Campus on Lake Erie



Ottawa County Scholarship

Get out of the classroom and experience hands-on science in your own backyard at The Ohio State University's Stone Laboratory. Earn college credit that is transferrable to most universities. Applications for this FULL SCHOLARSHIP are open to permanent Ottawa County residents:

- High school students
- College students
- Teachers

This project was funded by a grant from the Ottawa County Community Foundation, an affiliate organization of the Toledo Community Foundation.

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DEADLINE

Initial scholarship recipients will be chosen by early April, though funds may still be available after the deadline.

TO APPLY

Submit a Stone Lab application at stonelab.osu.edu and contact 614-292-8949 or stonelab@osu.edu for additional scholarship requirements.



STONE LABORATORY

Ohio State's Island Campus on Lake Erie

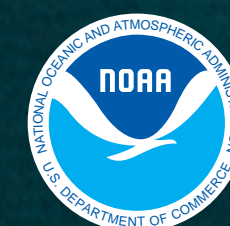


**Where your
future in science
takes shape.**

At Stone Lab, science majors can jumpstart their careers with hands-on upper-level courses – and students in any major can have fun and earn general education credits in the field instead of a classroom.

stonelab.osu.edu

OHSU-SLC-1595



For 120 years, Stone Lab has been a crucial asset in Lake Erie research, education and outreach.

The oldest freshwater biological field station in the United States, Stone Lab is the research station for the Ohio Sea Grant College Program, one of 33 NOAA Sea Grant programs, and the summer island campus on Lake Erie for The Ohio State University.

Each summer, students and professionals from all over the country gather here, taking 25 college-credit courses and workshops and conducting ground-breaking research in Great Lakes issues.

Come to the lab for a class, workshop, field trip, tour or conference and see what makes Stone Lab an enduring force for scientific advancement.



Summer Courses

Introductory Courses

One-Week Courses, 2 semester hours

- Biology
- Ecology
- Oceanography
- Sport Fishing

Upper-Level Courses

One-Day and Two-Day Courses, .5 semester hour

One-Week Courses, 2 semester hours

Five-Week Courses, 4 semester hours

- Biology
- Ecology
- Evolution
- Herpetology
- Ichthyology
- Zoology

Science Courses for Educators

One-Week Courses, 2 semester hours

- Ecology
- Geology
- Ornithology
- Water and Wildlife Training

Non-Credit Workshops

One- to Three-Day Workshops

Apply at stonelab.osu.edu/applynow/

STONE LABORATORY

Ohio State's Island Campus on Lake Erie

stonelab.osu.edu



Research Experience for Undergraduates (REU) Scholarship Program

Live the life of a professional researcher! Spend five weeks working alongside top scientists learning how to conduct in-the-field research while taking an upper-level course at the lab.

This year, students can apply for the following projects:

- Ecology of the round goby: analysis of the condition of this Western Lake Erie Basin invader (Ichthyology)
- Ecology and conservation issues in northern Ohio crayfish (Ecology)
- Survival of birds inhabiting the Lake Erie Islands (Ornithology)
- Fish investigations to inform fisheries management (Fisheries Research/Management)
- Exploration of Lake Erie nutrient loading, hypoxic events (the "dead zone") and harmful algal blooms (Limnology)



Interested?

Visit go.osu.edu/reu to learn more



Tuition Assistance

Think this all sounds great, but don't know how to pay for it? All students and educators taking for-credit courses at Stone Lab are eligible to apply for tuition assistance, which ranges from \$200 to \$2,500.

go.osu.edu/slscholarships

Jobs and Internships

Students enrolled in five-week courses can work a part-time job on the island to cover room and meals. Jobs may also be available at local Put-in-Bay businesses. Full-time seasonal positions for biological field station assistants, research assistants and hospitality internships are also available.

go.osu.edu/sljjobs

