WELCOME TO THE SEA FLOOR EXPLORER OVERNIGHT PROGRAM

These programs link middle school students directly to current research in oceanography and provide opportunities to use authentic research procedures and equipment. Students are put into challenging research simulations that focus on coring/micropaleontology, underwater seismology, hydrothermal vent communities, and underwater archaeology. They also delve into deep-sea technology as they design and test their own ROV. Training culminates in a morning research cruise on the *R/V Sea Explorer* where students use side-scan sonar, a gravity corer, and our SeaBotix ROV to survey and explore the seafloor.

Please take a few moments to familiarize yourself with the materials we have included, and share them with other teachers and chaperones who will be joining you. These materials contain important information to prepare you, your chaperones, and your students for your visit. You will also find important forms that must be returned to the Ocean Institute in order for you and your students to participate.

If you have any questions about your visit to the Ocean Institute, please do not hesitate to contact our Ocean Education Center Overnight Coordinator, Shanette Rillorta at 949-496-2274, extension 339. Again, welcome to the Sea Floor Explorer Overnight Program! We are looking forward to your visit.

Sincerely,
Rick Baker
Vice President, Education

TABLE OF CONTENTS

A. ADMINISTRATIVE CHECKLIST FOR THE OVERNIGHT PROGRAM

Immediately upon receiving this package…
- ❑ Carefully review the Teacher Preparation Package
- ❑ Arrange your transportation
- ❑ Mail information letter to parents, and make sure to ask for parent chaperones

Two months prior to your trip…
- ❑ **Confirm student and adult numbers with the Ocean Institute**
- ❑ Arrange for parent chaperones—please limit the number to two adults for every 12 students.
- ❑ Copy and distribute the Chaperone and Parent Information Packets. KEEP THE MEDICAL FORMS AND THE ACKNOWLEDGEMENT OF RISK FORMS SEPARATE!

One month prior to your trip…
- ❑ Begin student preparation
- ❑ Collect signed Acknowledgement of Risk and Waiver and medical forms from each student and adult
- ❑ **Return the Special Information Form to the OEC Overnight Coordinator**

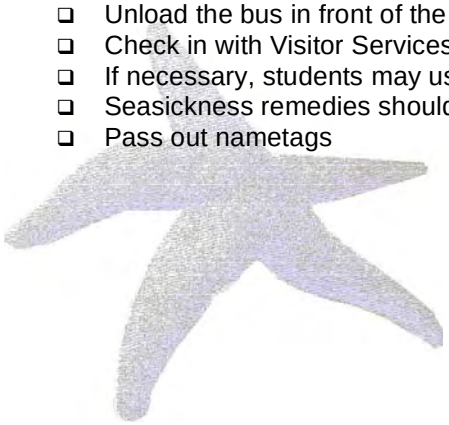
Two weeks prior to your trip…
- ❑ Mail program payment to the Ocean Institute—**full payment must be received a minimum of 10 days before your program**
- ❑ Collect remaining signed Acknowledgement of Risk and Waiver and medical forms from each student and adult
- ❑ Divide students into teams

Note: We cannot guarantee that changes in numbers of students or adults can be accommodated if requested within two weeks of your program date

One week prior to your trip…
- ❑ Review behavioral expectations with students
- ❑ Review Student Clothing and Supply List
- ❑ Contact the Ocean Institute with any last minute questions or changes

24 hours to go!!!…
- ❑ If inclement weather is expected, contact the Ocean Institute for status of the program
- ❑ Make nametags for students and adults
- ❑ Complete ***R/V Sea Explorer*** manifest listing ALL students and adults
- ❑ Separate Medical and Acknowledgement of Risk forms

When you arrive for the Sea Floor Explorer Program…
- ❑ Unload the bus in front of the Ocean Institute
- ❑ Check in with Visitor Services building with a final head count
- ❑ If necessary, students may use the restroom facilities—please limit use to 7 girls and 7 boys at a time
- ❑ Seasickness remedies should be taken at least 30 minutes before departure
- ❑ Pass out nametags



B. DESCRIPTION OF THE SEA FLOOR OVERNIGHT PROGRAM

SEA FLOOR EXPLORER OVERNIGHT
This program gives students the opportunity to explore plate tectonics in different facets of ocean science and allows for more in-depth study beyond the day lab. All students will participate throughout the evening in a set of research "expeditions" focusing on coring/paleoclimatology, underwater seismology, hydrothermal vent communities, underwater archaeology, and deep-sea technology. After dinner, students will design and test their own ROV (Remote Operated Vehicle) and operate their vehicle in several challenges. Students start the next day at sunrise with a research cruise aboard the R/V Sea Explorer. Stations include: taking a core sample, sieving the core for foraminifera, imaging the seafloor with our Side-scan sonar, and surveying a geologic and/or archaeological site with our Seabotix ROV! To conclude the program, student groups will discuss their expedition findings to their peers in a short presentation style format.

Day 1
Laboratory Stations:

- **Underwater Archaeology**
  In this expedition students will investigate the underwater archaeology site of Port Royal. They will learn how to draw a map to scale as they survey the site, deal with the concept of buoyancy when using lift bags to excavate artifacts, and collect research to discover the answer to Port Royal's demise.

- **Sea Floor Seismology**
  After reviewing plate tectonic theory using our interactive globe, students familiarize themselves with technology used to study earthquakes. Students will conduct a simple experiment relating amplitude to the distance of a seismometer from an epicenter. The expedition will lead students through the process of finding the epicenter of an earthquake through triangulation.

- **Deep Sea Coring**
  In this expedition, students will observe foraminifera under microscopes and examine the layers of a core sample. As marine geologists and micropaleontologists, they will work to unlock the mysteries of Earth's climatic and tectonic past.

ROV Design and Challenge:

- **Design**
  Students will be introduced to the concepts of pressure, buoyancy, and force issues with respect to designing a functional ROV. As a team they will have to operate on a time and monetary budget to build and accessorize their ROV to succeed in their mission.

- **Challenges:**
  - Obtain neutral buoyancy
  - Retrieve artifacts/sediment sample in ROV test tank
  - Hydrothermal Vent Exploration

Day 2
Morning Research Cruise aboard the R/V Sea Explorer: (subject to change due to inclement weather)
6:30 am - 9:00 am.

- **Core sample/Foramanifera:** A gravity corer will be sent down to 900 feet below sea level. Students will examine the layers in the core and use sieves to try and isolate live benthic foraminifera and diatoms. Students will use hand lenses and video-microscopes to identify any species found.

- **Side-scan Sonar station**: The side-scan will record images of the sea floor as we leave the harbor. Students will interpret the geology of the site as well as any anomalies found.

- **ROV station**: Inside the harbor, students will operate a real ROV to survey a geologic or archaeological site.

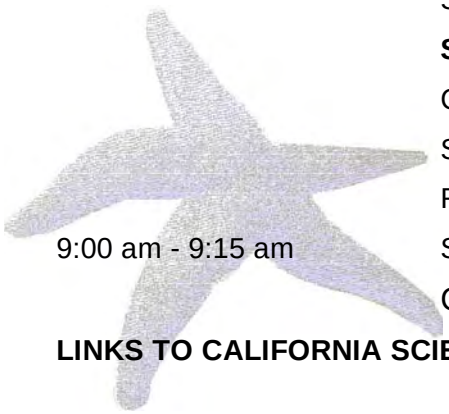
- **Student Expedition Presentations**

Day 1

3:00 pm - 3:30 pm	School Arrives and Checks in at Front Desk
3:30 pm - 3:40 pm	Students stow gear / use bathroom on Surfscience Sleepdeck
3:40 pm - 3:50 pm	Introduction / Rules
3:50 pm - 4:00 pm	Split into instructor groups / **Plate Tectonics Game**
4:00 pm - 6:30 pm	**Expedition Rotations**
	Underwater Seismology
	Underwater Archaeology
	Coring
6:30 pm - 7:15 pm	Dinner
7:15 pm - 8:00 pm	**ROV Building Challenge**
8:00 pm - 9:30 pm	**ROV Missions**
	Test Tank- Artifact/Sediment Retrieval
	Hydrothermal Vent Exploration (***RVSE***)
	Presentation prep / Pressure Cups
9:30 pm - 10:00 pm	Fire Pit / Nighttime rules / Get ready for bed
10:00 pm	Lights out!

Day 2

5:45 am	Students wake up!
5:45 am - 6:30 am	Students get dressed / clean mats / pack and stow gear
	Eat breakfast
6:30 am - 9:00 am	**Research Cruise: Dana Point Oceanographic Survey**
	Sidescan Sonar of Harbor
	Core Sample in Canyon / Pressure Cups
	Sea Lions
	Stations (at dock)
	Core / Sieve for Forams
	Sidescan Sonar
	ROV exploration of harbor.
9:00 am - 9:15 am	Student Expedition Presentations
	Conclusion and Goodbyes!



LINKS TO CALIFORNIA SCIENCE STANDARDS

Grade Six

Plate Tectonics and Earth's Structure

1.a. Students know evidence of plate tectonics is derived from the fit of the continents; the location of earthquakes, volcanoes, and midocean ridges; the distribution of fossils, rock types, and ancient climate zones.

1.b. Students know Earth is composed of several layers: a cold, brittle lithosphere; a hot, convecting mantle; and a dense, metallic core.

1.c. Students know lithospheric plates the size of continents and oceans move at rates of centimeters per year in response to movements in the mantle.

1.d. Students know that earthquakes are sudden motions along breaks in the crust called faults and that volcanoes and fissures are locations where magma reaches the surface.

1.e. Students know major geologic events, such as earthquakes, volcanic eruptions, and mountain building, result from plate motions.

1.g. Students know how to determine the epicenter of an earthquake and know that the effects of an earthquake on any region vary, depending on the size of the earthquake, the distance of the region from the epicenter, the local geology, and the type of construction in the region.

Shaping Earth's Surface

2.d. Students know earthquakes, volcanic eruptions, landslides, and floods change human and wildlife habitats.

Heat (Thermal Energy)

3.a. Students know energy can be carried from one place to another by hear flow or by waves, including water, light and sound waves, or by moving objects.

Ecology (life science)

5.a. Students know energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis and then from organism to organism through food webs.

5.b Students know matter is transferred over time from one organism to others in the food web and between organisms and the physical environment.

5.c. Students know matter is transferred over time from one organism to others in the food web and between organisms and the physical environment.

5.e Students know the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.

Investigation and Experimentation

7.a. Students will develop a hypothesis.

7.b. Students will select and use appropriate tools and technology to perform tests, collect data, and display data.

7.c Construct appropriate graphs from data and develop qualitative statements about the relationships between variables.

7.g. Students will interpret events by sequence and time from natural phenomena (e.g., the relative ages of rocks and intrusions).

Grade Seven

Earth and Life History (Earth Science)

4.a. Students know Earth processes today are similar to those that occurred in the past and slow geologic processes have large cumulative effects over long periods of time.

4.b. Students know the history of life on Earth has been disrupted by major catastrophic events, such as major volcanic eruptions or the impact of asteroids.

4.c. Students know that the rock cycle includes the formation of new sediment and rocks and that rocks are often formed in layers, with the oldest generally on the bottom.

4.e. Students know fossils provide evidence of how life and environmental conditions have changed.

4.f. Students know how movements of Earth's continental and oceanic plates through time, with associated changes in climate and geographic connections, have affected the past and present distribution of organisms.

Investigation and Experimentation
7.a. Students will select and use appropriate tools and technology to perform testes, collect data, and display data.
7.c. Students will communicate the logical connection among hypotheses, science concepts, tests conducted, data collected, and conclusions drawn from the scientific evidence.
7.d. Students will construct scale models, maps, and appropriately labeled diagrams to communicate scientific knowledge (e.g., motion of Earth's plates).

Grade Eight
Motion
1.c. Students know how to solve problems involving distance, time, and average speed.
1.f Students know how to interpret graphs of position versus time and graphs of speed versos time for motion in a single direction.

Density and Buoyancy
8.d. Students know how to predict whether an object will float or sink.

Investigation and Experimentation
9.a. Students will plan and conduct a scientific investigation to test a hypothesis.
9.c. Students will distinguish between variable and controlled parameters in a test.
9.e Communicate the steps and results from an investigation in written reports and oral presentations.

C. ADMINISTRATIVE PREPARATION

ADMINISTRATIVE CONTACT

For questions regarding the **Sea Floor Explorer Programs**, please contact:

Shanette Rillorta, Ocean Education Center Overnight Coordinator
Telephone Number: (949) 496-2274, extension 339
E-mail : srillorta@ocean-institute.org

INTRODUCTION
Thank you for choosing the Ocean Institute as your field trip destination. We appreciate the time and effort it takes to prepare your students for their program, and we will do everything we can to make their experience as rewarding as possible.

Please make sure that all of the participating teachers have a copy of the teacher materials. The information contained here can help you find answers to your questions, develop your preparation timeline, and prepare both your students and chaperones. This packet also contains directions to the Ocean Institute as well as contact telephone numbers—please call us at any time with questions you may have about your field trip.

TEACHER INFORMATION: BEFORE YOUR PROGRAM
You can do several things before you arrive to help make your program run as smoothly as possible:

- Complete the **Program Information Form** and return to the OEC Overnight Program Coordinator. **We must have the accurate number of students attending the program at least one month before your program in order to ensure proper staffing and equipment.** Notify the Ocean Institute staff of students with special health, behavioral, or dietary considerations.

- Review the program goals, station activities, and expected behaviors with the students before you arrive. Complete the classroom activities with your students, and make sure they have a clear understanding of the educational concepts they will explore during the program.

- Spend some time choosing and preparing your parent chaperones. Review the program goals, station activities, and expected student behaviors with them before you arrive. Make sure that they have a clear understanding of their role as a chaperone.

VERY IMPORTANT
- This program accommodates a **maximum** of **45 students**. Please split your students into 3 research teams prior to arriving at the Ocean Institute.

- Have a signed Acknowledgement of Risk and Waiver and signed medical forms for each student and chaperone before boarding the bus.

- Have a completed Manifest for the ***R/V Sea Explorer***.

- Send program payment to the Ocean Institute at least 10 days before the scheduled date of your field trip.

TEACHER INFORMATION: DURING YOUR PROGRAM
Ocean Institute instructors are all well trained to instruct students of different ages and abilities. You and the chaperones can help the instructors monitor student behavior and safety. There are several things you can do to facilitate the smooth running of your educational program:

- Work cooperatively with Ocean Institute instructors and parent chaperones to manage students during the program.

- Work cooperatively with Ocean Institute instructors and parent chaperones to solve student and chaperone management problems.

- Report any problems to the Ocean Institute staff as soon as possible.

NO LATE ARRIVAL/NO EARLY DEPARTURE
Due to the schedule of the Sea Floor Explorer Overnight program, students and adults will not be permitted to arrive late or depart early.

CHAPERONE INTRODUCTION AND INFORMATION
Adult chaperones play a significant role in safety and the educational quality of the program. We request that you bring no more than 2 adults per 12 students. We ask your chaperones to help us in the following ways:

- Work cooperatively with Ocean Institute instructors and classroom teacher to enforce all safety rules
- Work cooperatively with Ocean Institute instructors and classroom teacher to keep students on task at the stations
- Guide students to different stations throughout the program
- Act as a positive role-model for the students by exhibiting enthusiasm for learning without answering questions directed at students

PAYMENT
Payment must be received 10 days before your program date. Please mail a **single check** for the total amount of the program minus the deposit you have already paid. Please make the check payable to **Ocean Institute.**

FINAL COUNT
Call the Ocean Institute two days before your program if the number of students or adults changes. When you arrive at the Ocean Institute for your program, you must have an accurate count of total students and adults participating in the program. If the number of participants listed on your Program Agreement is not accurate, call the Ocean Institute immediately. **We cannot guarantee that changes in numbers of students or adults can be accommodated if requested within 2 weeks of your program date.**

STUDENT AID
The Ocean Institute maintains a student aid fund for students who are unable to obtain sufficient funding to attend the program. Please call (949) 496-2274, extension 0 for more information and to receive the necessary forms for student aid.

TRANSPORTATION
Student transportation should be arranged well in advance. It is important that you arrive on time. Please schedule yourself to arrive 30 minutes before your scheduled program start time. If you arrive late, your program time will be shortened.

Buses can unload in front of the Student Services building. After the students have unloaded, the drivers will be notified of where to park the buses.

INFORMATION PACKETS
We have included separate packets for the teachers, chaperones, and parents. They contain copies of information and forms that must be completed before arriving for your program. **IT IS IMPORTANT THAT YOU ARE FAMILIAR WITH ALL THE INFORMATION AND FORMS FOUND IN EACH PACKET.** These packets are ready to be copied and distributed to the appropriate participants. Information on each of the forms is in the next section.

Please make sure that you provide chaperones with both the Chaperone Information Packet and the Parent Information Packet.

FORMS

The following forms are included in the Information Packets found at the back of this booklet. Please make sure that all of the forms are completed before you arrive for the Sea Floor Explorer Overnight Program. Make sure that you use the forms from this packet—they are the most updated forms.

Medical Forms
You will find **medical forms** in the Information Packets. You must have a completed and signed medical form for each student and adult participating in the Sea Floor Explorer Overnight Program. In order for a child to receive any prescription or non-prescription medication during the program, the Administration of Medication form(s) must be completed and signed by the parent or guardian and the child's physician.

Acknowledgement of Risk and Waiver
Each student must have this form signed by a parent or guardian to participate in any of the Sea Floor Explorer Series programs. Please make sure that you have one signed form for each student and adult chaperone when you check in with Student Services.

Manifest for the *R/V Sea Explorer*
A manifest for the ***R/V Sea Explorer*** must be completed for the cruise portion of the Sea Floor Explorer Overnight. The Coast Guard requires us to have a completed Manifest in order to account for all passengers before we leave the dock. Please have it completed before you arrive at the Ocean Institute—we will lose valuable instructional time if the Manifest needs to be completed when you arrive. It is important that the Manifest is accurate and includes the first and last names of ALL students, teachers, and chaperones. Your Ocean Institute Floating Laboratory Specialist will take a head count before boarding the vessel and the number of this count must match the number on the Manifest.

Program Information Form
The Program Information Form should be completed and returned to the Ocean Institute at least one month before your program. This information will help us prepare for your program. Use this form you to request your missions and inform us of any special needs.

MEDICAL ISSUES
The medical forms included in this package must be completely filled out and signed for every student and adult participating in the Sea Floor Explorer Overnight Program. Please carefully review the completed forms to ensure that they have been properly filled out and signed. The teacher-in-charge will keep all medical forms as well as be responsible for storing and distributing student medications (both prescription and non-prescription). Please notify the Overnight Coordinator in advance of any participant with special dietary or other needs. We do not have a medical doctor or nurse on site, and we do not have housing for sick students. Parents of ill or injured students will be notified immediately and arrangements made for transportation to the hospital or home.

STUDENT PREPARATION
The more familiar the students are with program concepts and content before they arrive, the more they will benefit from and enjoy their experience. We have included background information and classroom activities to introduce important concepts to your students before they arrive for their program.

STUDENT BEHAVIORAL EXPECTATIONS
Please take time to discuss the academic nature of their field experience with your students before arriving at the Ocean Institute. When at the Ocean Institute, we expect your students to follow the same behavioral rules you have in your classroom.

STUDENT SAFETY RULES
The students will use tools and equipment during the Sea Floor Explorer Overnight programs. They must wear proper safety gear and follow the instructor's safety guidelines.
A portion of the Sea Floor Explorer Overnight program takes place on the ***R/V Sea Explorer***. Before the cruise, you will be met by an Ocean Institute Floating Laboratory Specialist who will review the following safety rules with you and your students.

- Walk at all times while onboard the ***R/V Sea Explorer***—running and horseplay are not permitted.
- Keep both feet on the deck at all times, and remember to stay off the rails.
- Keep off the upper deck and access ladder unless permitted by Ocean Institute instructors.
- Keep hands off the equipment until instructed to do otherwise.

AVOIDING SEASICKNESS
There are several things that you and your students can do to avoid seasickness during the cruise:

- Take anti-motion medication at least 30 minutes before boarding the vessel.

CHAMBERS GIFT AND BOOK STORE
The *Chambers Gallery* Book and Gift Store is a fun and unique non-profit museum store open daily from 9:00 AM to 5:00 PM and definitely worth the visit. Additionally, the revenue is directed toward lowering tuition for schools that participate in Ocean Institute programs.

To help accommodate all of the schools that would like to shop each day, please have one teacher from your school check-in with a store staff member before your students begin shopping.

There will be a limit on the number of students allowed to shop at one time and we encourage you to organize them so that they all have time to enjoy the shop. Please have one or two adults in the store to help supervise your students. We ask that all food, drink, and backpacks be left outside while they are shopping. Teachers receive a 15% discount in the shop if members of the teachers club and 10% normally.

Please remind your students that sales tax will be added to their items.

In order to ensure a positive experience, we recommend the following:
1. Plan sufficient time before or after your program to shop.
2. All purchases should be stowed safely away and out of sight for the program.
3. Please allow only 10-12 students in the *Chambers Gallery* at a time. Remaining students should remain outside in a manner that does not interfere with traffic in and out of the building.

DIRECTIONS TO THE OCEAN INSTITUTE
The address of Ocean Institute:
24200 Dana Point Harbor Drive
Dana Point, CA 92629
(949) 496-2274

Directions from Los Angeles:

- Travel south on Interstate 5
- Exit on the Pacific Coast Highway Exit
- Stay in the right lane of the exit ramp and go north on P.C.H.
- Turn left onto Dana Point Harbor Drive
- The road ends in the Ocean Institute parking lot

Directions from San Diego:

- Travel north on Interstate 5
- Exit on the Beach Cities Exit

- Stay in the left lane of the ramp and go north on P.C.H.
- Turn left onto Dana Point Harbor Drive
- The road ends in the Ocean Institute parking lot

D. ***Classroom Activity: Background Research***

Have your students break up into their teams. Using various resources, have them answer the questions below.

CORING – OCEAN DRILLING PROJECT

- Why are scientists interested in studying cores from the sea floor?
- Why do cores have layers?
- What does biogenous and lithogenous mean?
- *(extra!) How is it possible that foraminifera shells, which are composed of calcium carbonate, have been found in deposits below the CCD (what does this stand for?) level?

Glossary: Words to Know

- oceanography
- biogenous, lithogenous
- foraminifera
- environmental indicator
- microfossils
- benthic
- latitude/longitude
- plate tectonics
- paleoclimatology
- protist
- remote operated vehicle
- igneous/metamorphic rock

UNDERWATER SEISMOLOGY

1. List three geologic features found on the sea floor of the Pacific Ocean.
2. Why would a scientist be interested in looking at an underwater ridge?
3. What is an hydrothermal vent and describe the characteristics around this environment. Do animals live here?
4. How are tsunamis formed? Do all underwater earthquakes generate tsunamis?
5. List the three major plate boundaries. Where do you find active volcanoes?

Glossary: Words to Know

- Mid-Atlantic Ridge
- spreading center
- compressional/shear wave
- SONAR
- tsunami
- epicenter

- oscilloscope
- fathometer
- seismometer
- hydrothermal vent
- amplitude
- P and S waves
- ROV
- pH

UNDERWATER ARCHAEOLOGY: PORT ROYAL

1. Where is Port Royal and how is it historically significant?
2. What are the primary steps in archaeology and why is every step so important to follow?
3. How is SONAR used to help locate shipwrecks – what else can sonar detect underwater?
4. How do archaeologists find deep-water wrecks? Why are these wrecks usually found more intact than other wrecks found in shallower waters?

Glossary: Words to Know

- archaeology
- artifact
- survey
- excavation
- conservation
- liquefaction
- buoyancy
- lift bag
- Side-scan SONAR
- anomaly

Resources

Deep Sea Drilling/Core sampling Sites:

1. Joint Oceanographic Institution – http://www.joinscience.org
   A consortium of 20 premier oceanographic research institutions serving the U.S. scientific community by leading large-scale, global research programs in scientific ocean drilling and ocean observing.

2. Integrated Ocean Drilling Program (IODP) – http://www.oceandrilling.org
   International research program that explores the structure and history of the earth recorded by the rocks and sediment of the sea floor.

3. The Lamont-Doherty Earth Observatory at Columbia University - http://www.ldeo.columbia.edu/CORE_REPOSITORY/RHP1.html Lamont-Doherty Deep-Sea Sample Repository. Data and general information on sediment and rocks from beneath the ocean floor. Also contains information for many additional earth science links, convection, forams, etc.
   Project PI: LOTTI, RAMONA (RUSTY)

ROV Sites:

1. SERPENT (scientific and environmental ROV partnership using existing industrial technology) – http://www.soc.soton.ac.uk/GDD/serpent/
   Using cutting edge ROV technology and data more accessible to the world's science community in order to share knowledge and progressive deep-sea research

2. NOAA's Undersea Research Center at the University of North Carolina – http://www.uncw.edu/nurc/systems/rov.htm
   An excellent site for general information pertaining to ROV's. Contains a fact sheet describing components to an ROV, principle applications, advantages/disadvantages for undersea research.

3. Marine Technology Society's ROV committee website – http://www.rov.org/info.cfm

4. Visit our friends at MBARI (Monterey bay Aquarium Research Institute). They conduct some of the most cutting edge marine research in the world off the Monterey canyon. – www.mbari.org

Hydrothermal Vent Sites:

1. http://www.botos.com/marine/vent01.html
   Great links and background information for those teaching about these extreme environments

2. NOAA's video clip and vents program website – http://www.pmel.noaa.gov/vents/geiology/video.html

Earthquakes/Volcanoes/Landslides/Coastal Storms and Tsunami Information:

USGS is the winner for an overall excellent, informative, website.
Earthquake information - http://earthquake.usgs.gov
Volcano information - http://volcanoes.usgs.gov
Landslide information - http://landslides.usgs.gov
Coastal storms and Tsunami information - http://marine.usgs.gov

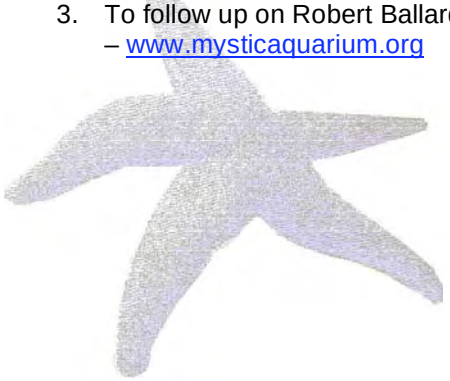
Foraminifera Information:

1. A very informative website on fossil records, life history and ecology, systematic, and morphology of forams. Nice visuals with clearly stated information. http://www.ucmp.berkeley.edu/foram/foraminintro.html

2. Another wonderful site is http://www.ucl.ac.uk/GeolSci/micropal/foram.html

Underwater Archaeology Information:

1. INA is the premier nautical archaeology institute and graduate program in the US. There are many great links to other project sites, including Port Royal - www.ina.tamu.edu
2. Society for Historical Archaeology has an underwater section as well as other good links in general – www.sha.org
3. To follow up on Robert Ballard's deep sea explorations, go to his Institute for Exploration at Mystic Aquarium – www.mysticaquarium.org



Print Form

ACKNOWLEDGEMENT OF RISK AND WAIVER FOR ALL PARTICIPANTS

Welcome to the Ocean Institute! We want you and everyone to have a memorable and safe experience.

The Ocean Institute's environment, vessels, facilities, and activities are unique and different from your usual surroundings and activities. There are many inherent risks, dangers, and hazards and everyone must exercise caution at all times in order to avoid or minimize the risk of damage, injury, and death.

Examples of these risks, dangers, and hazards include, without limitation: (a) walking and standing surfaces that may be wet, slippery, moving, irregular, unstable, and rough; (b) open areas such as hatches into which someone could fall; (c) low or irregular lighting, or no lighting at all; (d) objects and equipment that could fall on someone; (e) low ceilings; (f) ropes, chains, and other items that could strike or entangle someone; (g) extreme and variable physical, weather, and ocean conditions, including darkness, sun glare, storms, and hot and cold temperatures; (h) vessels, docks, buildings, ladders, and stairs from which someone could fall; (i) vessels and docks that could pitch, roll, capsize, flood, collide, and sink; (j) gaps between a vessel and a dock that could open or close suddenly and unpredictably; (k) possible encounters with wildlife and plants; and (l) unavailability of medical attention and treatment.

If you attend and Ocean Institute activities, then you must exercise caution at all times to protect yourself and others from these risks, dangers, and hazards. If children or other persons under your care attend any Ocean Institute activities, then discuss these risks, dangers, and hazards with them as they too must exercise caution at all times.

Program Name: Program Date:

Participant Name:

Last: First:

Birth date:

Guardian Name:

Last: First:

Home Phone: Cell Phone: Work Phone:

Address:

City: State: Zip:

Email:

If you attend any Ocean Institute activities, and/or if others under your care attend any Ocean Institute activities, then by checking the box below you, on behalf of yourself and such other persons, shall be deemed to have read and understood this document and to have irrevocably waived any and all claims against the Ocean Institute and its directors, officers, employees, contractors, volunteers, agents, and insurers for damage, injury, accident, illness, or death occurring during or by reason of such activities.

Additionally, I authorize the use of photos taken of me and others under my care by the Ocean Institute for its promotional purposes.

☐ As the Parent/Guardian, I have read and agree to the statements made on this document.

Today's Date:

Print Form

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