

**Chief Scientist Training  
Workshop  
R/V Blue Heron**

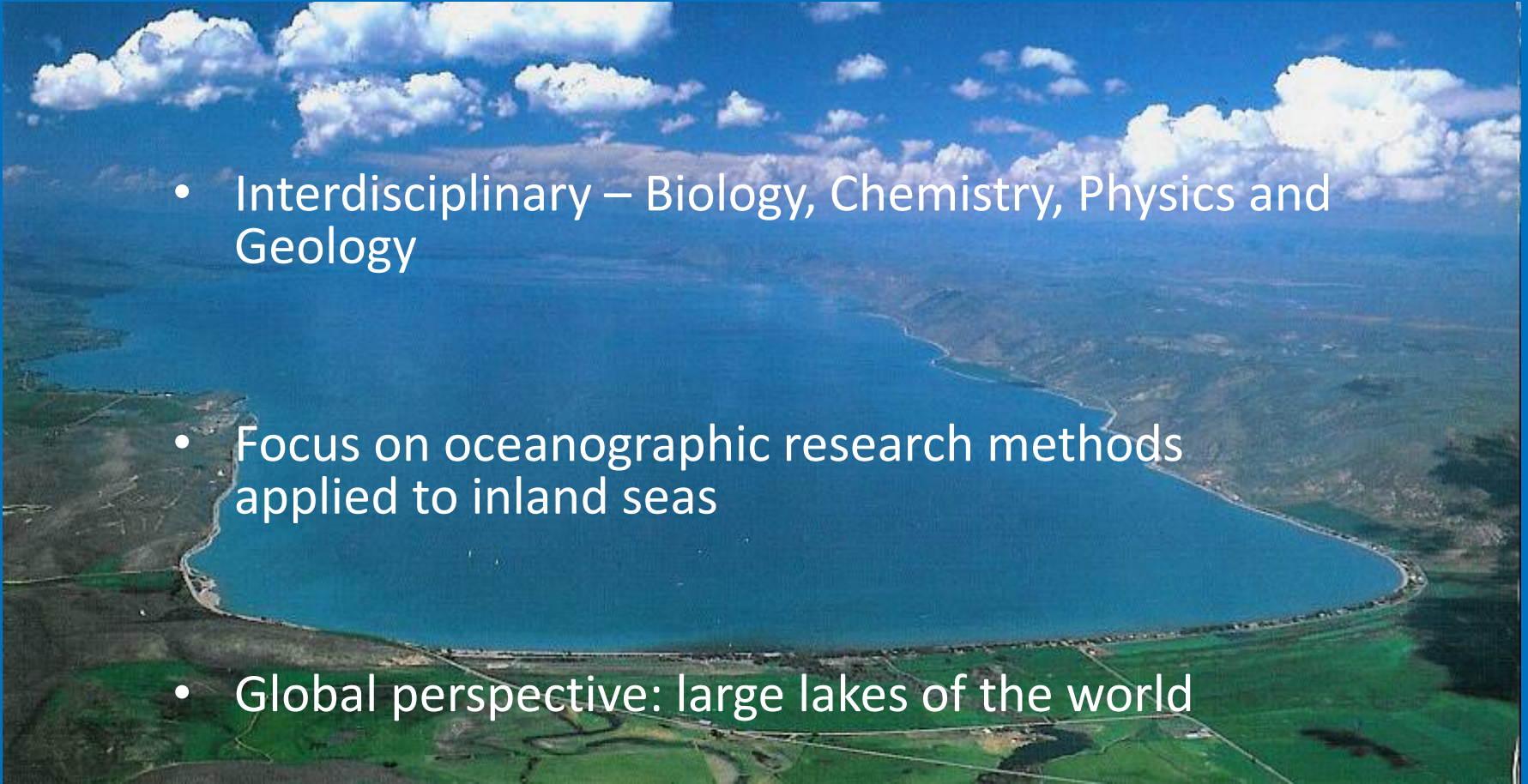


# The Large Lakes Observatory and its mission:

- Research institute, founded in 1994
  - Mission:
    - Graduate program in oceanography, research dedicated to the science of inland seas
    - Undergraduate education, in partnership with UMD departments
- 

# The Large Lakes Observatory and its mission:

- Interdisciplinary – Biology, Chemistry, Physics and Geology
- Focus on oceanographic research methods applied to inland seas
- Global perspective: large lakes of the world



# The Large Lakes Observatory and its mission:



# R/V Blue Heron

- 78' former Grand Banks fishing trawler



# R/V Blue Heron



Bob Baker and the F/V Fairtry



USCG aerial photo

# R/V Blue Heron

- 78' former Grand Banks fishing trawler
- Open to all researchers
- Up to 21 days of 24 hours a day operations
- 4 crew, 1 technician and 6 scientists



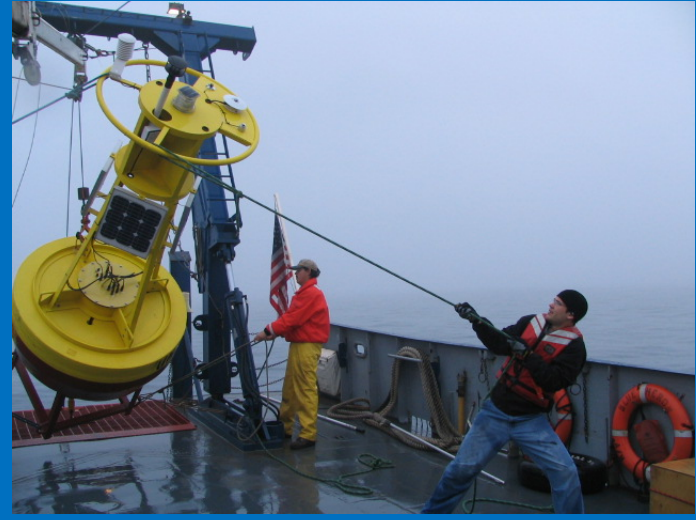
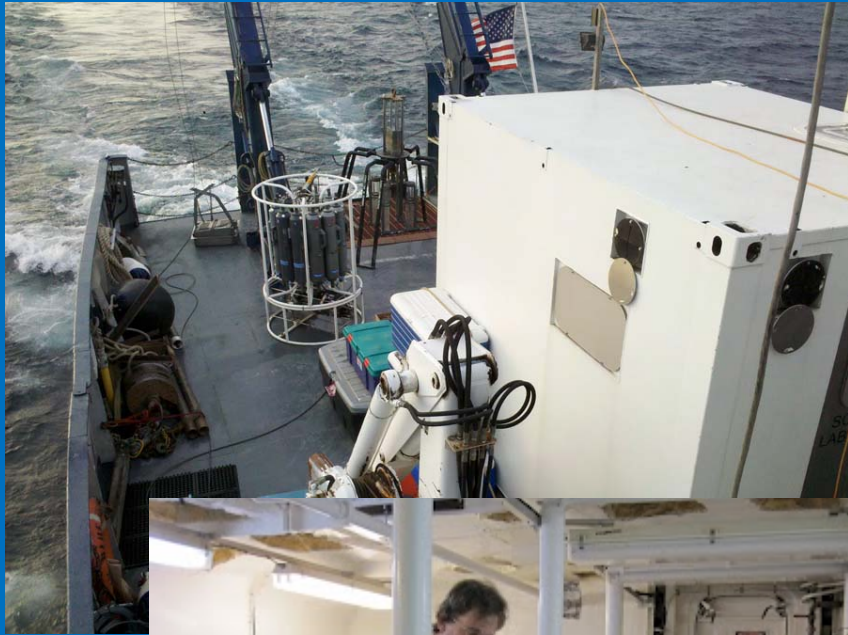
# R/V Blue Heron



- Travels on all of the Great Lakes
- Users/Funding from: NSF, NOAA (SeaGrant, GLOS), LCCMR, DNR, Great Lakes Fishery Commission, etc.



Not only has a research mission,



But also serves an education/outreach mission



# Marine Operations

- Scheduling
- Budgets
- Compliance
- Personnel
- Cruises
- Outreach



# Bi-Annual Inspection

- NSF/Naval Architects
- Two days but many weeks of prep.
- Covers
  - a. Safety
  - b. Habitability
  - c. Propulsion
  - d. Scientific gear
  - e. Etc.....

## VESSEL INSPECTION REPORT R/V BLUE HERON



19 - 20 September 2018

prepared for:



**NATIONAL SCIENCE FOUNDATION**  
2415 Eisenhower Avenue • Alexandria, VA, 22314

prepared by:

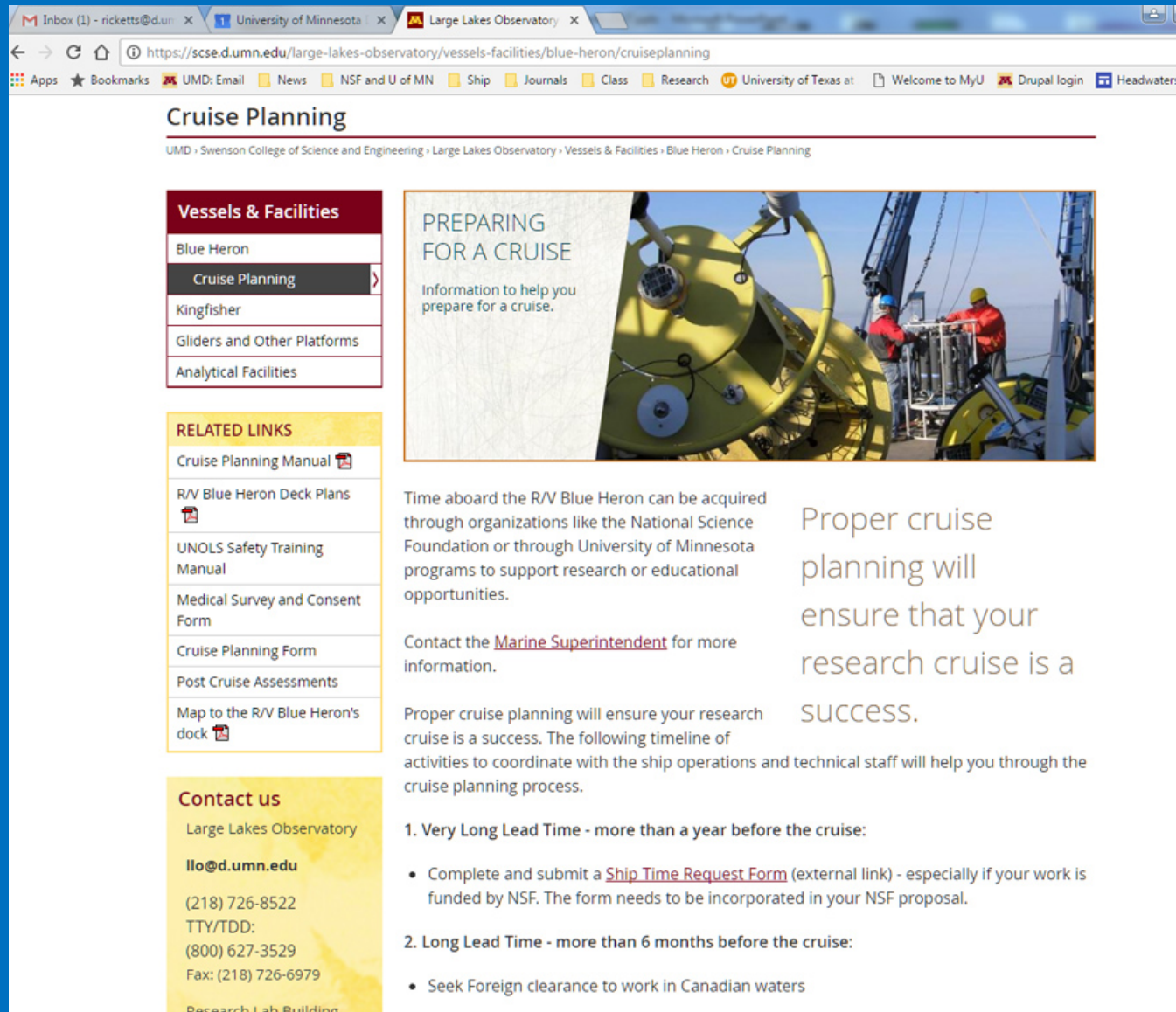


70 Essex Street • Mystic, CT 06355  
[(860) 536-0009] • <http://www.jmsnet.com> • [jmsa@jmsnet.com](mailto:jmsa@jmsnet.com)

# Shipyard dry-docking



# Pre-cruise Planning



**Cruise Planning**

UMD > Swenson College of Science and Engineering > Large Lakes Observatory > Vessels & Facilities > Blue Heron > Cruise Planning

**Vessels & Facilities**

- Blue Heron
- Cruise Planning**
- Kingfisher
- Gliders and Other Platforms
- Analytical Facilities

**RELATED LINKS**

- Cruise Planning Manual
- R/V Blue Heron Deck Plans
- UNOLS Safety Training Manual
- Medical Survey and Consent Form
- Cruise Planning Form
- Post Cruise Assessments
- Map to the R/V Blue Heron's dock

**Contact us**

Large Lakes Observatory

[llo@d.umn.edu](mailto:llo@d.umn.edu)

(218) 726-8522  
TTY/TDD:  
(800) 627-3529  
Fax: (218) 726-6979

Research Lab Building

**PREPARING FOR A CRUISE**

Information to help you prepare for a cruise.

Time aboard the R/V Blue Heron can be acquired through organizations like the National Science Foundation or through University of Minnesota programs to support research or educational opportunities.

Contact the [Marine Superintendent](#) for more information.

Proper cruise planning will ensure your research cruise is a success. The following timeline of activities to coordinate with the ship operations and technical staff will help you through the cruise planning process.

Proper cruise planning will ensure that your research cruise is a success.

**1. Very Long Lead Time - more than a year before the cruise:**

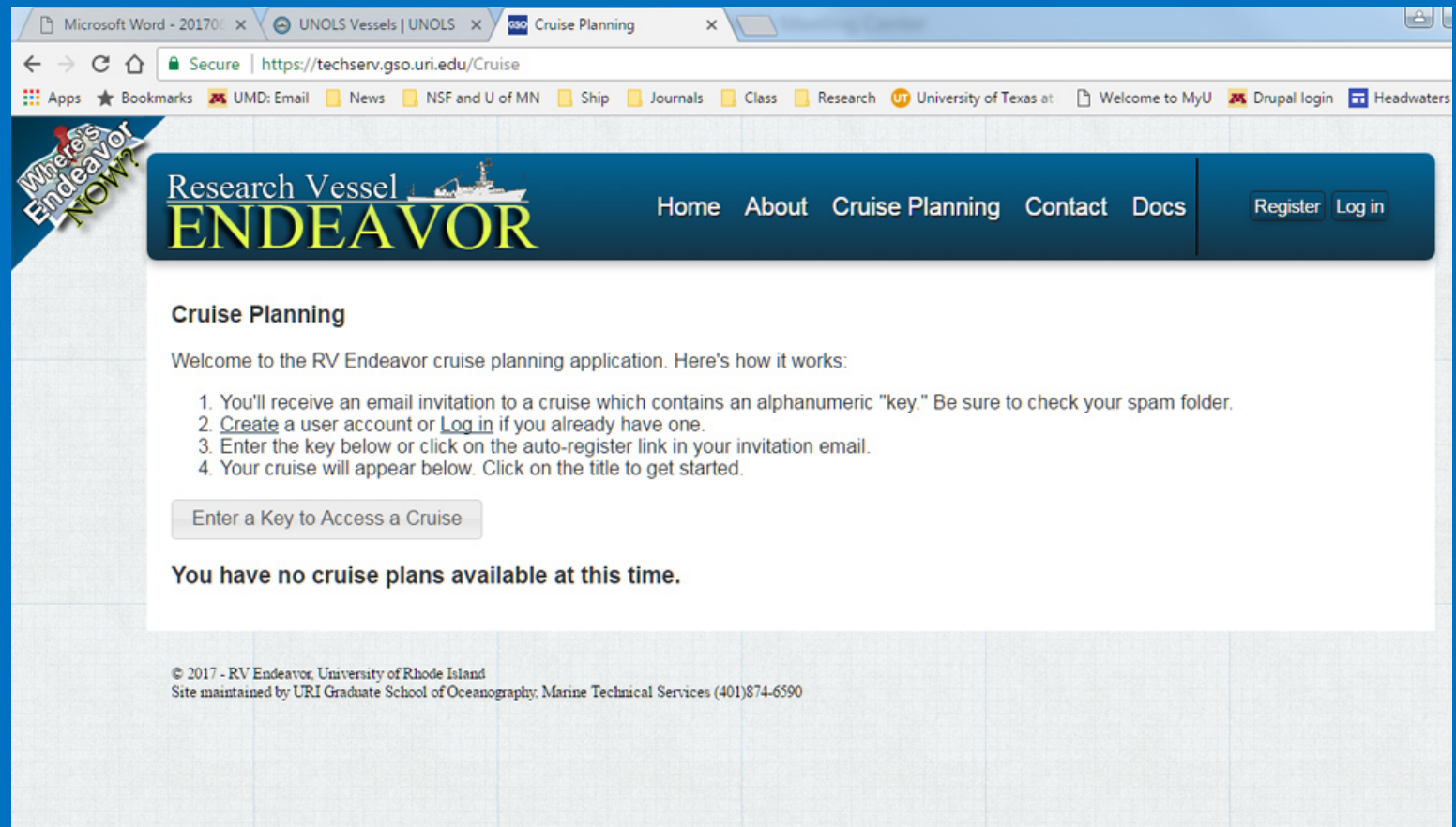
- Complete and submit a [Ship Time Request Form](#) (external link) - especially if your work is funded by NSF. The form needs to be incorporated in your NSF proposal.

**2. Long Lead Time - more than 6 months before the cruise:**

- Seek Foreign clearance to work in Canadian waters

# Pre-cruise Planning

Example from another institution:



The screenshot shows a web browser window with the URL <https://techserv.gso.uri.edu/Cruise>. The browser tabs include "Microsoft Word - 20170...", "UNOLS Vessels | UNOLS", and "Cruise Planning". The browser's address bar shows "Secure" and the URL. The browser's toolbar includes "Apps", "Bookmarks", "UMD: Email", "News", "NSF and U of MN", "Ship", "Journals", "Class", "Research", "University of Texas at", "Welcome to MyU", "Drupal login", and "Headwaters".

The website header features a dark blue navigation bar with the text "Research Vessel ENDEAVOR" in white and yellow, accompanied by a small image of the ship. To the right of the header are navigation links: "Home", "About", "Cruise Planning", "Contact", and "Docs". Further right are "Register" and "Log in" buttons. A diagonal banner on the left side of the header reads "Where's Endeavor NOW?".

The main content area is titled "Cruise Planning" and contains the following text:

Welcome to the RV Endeavor cruise planning application. Here's how it works:

1. You'll receive an email invitation to a cruise which contains an alphanumeric "key." Be sure to check your spam folder.
2. [Create](#) a user account or [Log in](#) if you already have one.
3. Enter the key below or click on the auto-register link in your invitation email.
4. Your cruise will appear below. Click on the title to get started.

Below the list is a text input field with the placeholder text "Enter a Key to Access a Cruise".

Below the input field is a message: "You have no cruise plans available at this time."

At the bottom of the page, the footer contains the following text:

© 2017 - RV Endeavor, University of Rhode Island  
Site maintained by URI Graduate School of Oceanography, Marine Technical Services (401)874-6590

# Pre-cruise Planning

**Research Vessel**

**BLUE HERON**

*Cruise Planning Manual*

**Large Lakes Observatory  
University of Minnesota, Duluth**



# Pre-cruise Planning

## 5. Instrumentation

- a. SeaBird Model 911 plus CTD (deck unit) with D.O. sensor, pH/ORP sensor, Chl-a fluorometer, CDOM, transmissometer, PAR sensor, and altimeter.
- b. Seabird 32 Carousel with 12 8-liter bottle capacity
- c. Triaxus towed vehicle with 911+ CTD, Chl-a fluorometer, transmissometer, D.O. sensor, and PAR sensor.
- d. Knudsen Model 320/R Echo Sounder with 28 kHz transducer, analog and digital output to computers in dry lab, wet lab and pilot house
- e. Applanix POS-MV OceanMaster RM Motion Referencing Unit (Inertial with twin differential GPS)
- f. Teledyne RDI Acoustic Doppler Current Profiler, 150 kHz
- g. Reson Sea Bat Model 7101 Multi-Beam Sonar, 240 kHz, 511 beams, 150 deg swath width, with side scan.
- h. Underway sea surface water data with a temperature sensor, Chl-a fluorometer, CDOM, transmissometer, SPAR, and thermosalinograph.

## 8. Other Available Instrumentation

- a. Ocean Instruments Multi-Corer
- b. Benthos gravity corer
- c. Heavy Piston corer
- d. Kullenberg Piston corer
- e. Peterson Grab sampler
- f. Plankton nets
- g. 60' Stauffer midwater trawl with a trawl sonar system.
- h. Geopulse High Resolution Seismic Reflection Profiling System (1-3 kHz)
- i. Bolt Model 600B airguns with 1, 5, 10 and 40" chambers
- j. Edgetech Side Scan/CHIRP system.
- k. bbe FluoroProbe III
- l. Satlantic ISUS V3 Nitrate analyzer
- m. McLane WTS-LV (Large Volume Pumps)
- n. McLane Paraflux Mark78H-21 Sediment Traps

In the Blue Heron shared-use equipment pool – check for availability

Equipment from other vessels...

# Pre-cruise Planning

## R/V Blue Heron Cruise Plan

1. Date:
2. Principal Investigator:
3. Chief Scientist:
4. Phone/Fax:
5. Cruise Title:
6. Requested date and time of loading:
7. Requested date and time of departure from port: **6:55 A.M. on**   
***SAFETY LECTURE AND FIRE DRILL WILL START ONCE THE ENTIRE SCIENCE PARTY IS ASSEMBLED ON THE MAIN DECK 10 MINUTES PRIOR TO DEPARTURE – SHIP WILL NOT LEAVE THE DOCK PRIOR TO COMPLETION OF THE LECTURE AND DRILL***
8. Requested date and time of return to port: **5:00 P.M. on**
9. Requested date and time of off-loading:   
***YOU MUST OFF-LOAD WITHIN 24 HOURS OF RETURNING TO PORT***
10. Are you planning on working in Canadian waters?  **No**
11. If you are planning on working in Canadian waters, do you have the necessary clearances?  **No**
12. **Attach** track chart showing station locations and coordinates, as per instructions on page 2 of the cruise manual. Please give coordinates in decimal minutes: DD° mm ddd'
13. Please provide detailed information on each station's activities. Attach separate sheets if necessary. Please estimate time on each station:
14. List the equipment and gear that will be brought aboard. For large items give the size and weight. Attach separate sheets if necessary:

# Pre-cruise Planning

## RV Blue Heron Medical Information

Submission of this form constitutes acknowledgement that you have no physical defects or ailments which would prevent the performance of duties at sea for extended periods of time. There is limited medical service available on board. The crew and technical staff have been trained in first aid and UMN subscribes to a 24 hour phone and email medical advisory service called MedAire. While filling out the form, please provide all information you would want emergency response personnel both on board and at MedAire to know about you if you are incapacitated. THIS INFORMATION WILL BE KEPT CONFIDENTIAL with the Chief Scientist, Master, and shore personnel that need to know. The form will be destroyed by shredding at the end of the sailing season.

**If you use prescription and/or over the counter medications bring enough medication to last the duration of the cruise.**

Please provide your doctor's contact information so that the crew and/or shoreside MedAire professional can interact with them if necessary during an emergency at sea:

Doctor's full name: \_\_\_\_\_ Phone number: \_\_\_\_\_  
**It is strongly recommended that you consult with your doctor regarding the advisability of participating on the cruise prior to boarding the ship.**

Emergency Contact (spouse/parent/etc.): \_\_\_\_\_ Phone number: \_\_\_\_\_

yes no Do you have any food allergies or dietary restrictions? If yes, enter them below and inform the Chief Scientist  
  so the information can be incorporated into the Cruise Planning Form.

\_\_\_\_\_

yes no Do you use any medicines regularly? If yes, list them below. Including where they are stored and rules for dosage and administration if you are incapacitated. Also ensure that you have a sufficient supply for the entire trip, including potential unexpected delays.

\_\_\_\_\_

\_\_\_\_\_

yes no Do you have any medical conditions that could flare up and require prompt administration of special medications or other therapies? For example, diabetes, heart problems, ulcers, asthma, etc. If yes, please describe:

\_\_\_\_\_

yes no Do you have any conditions that might lead to sudden unconsciousness or loss of motor control or normal coordination? For example, epilepsy or fainting spells. If yes, please describe:

\_\_\_\_\_

yes no Do you have any impairments of normal coordination and agility? For example, an artificial limb or partial paralysis. If yes, please describe:

\_\_\_\_\_

yes no Do you have any uncorrectable impairments of normal sensory perception (sight, hearing, etc.). If yes, please describe:

\_\_\_\_\_

yes no Have you received any medical advice, pertinent to the time you are scheduled to be at sea, to the effect that you should not travel far away from full medical care facilities? If yes, please describe:

\_\_\_\_\_

# Pre-cruise Planning

Long lead time items

Use of the Radioisotope van

Users must go through U of Minn. training



The screenshot shows the University of Minnesota website's Radiation Safety page. At the top, the University of Minnesota logo and name are displayed, along with the slogan "Driven to Discover™". A search bar is located in the top right corner. Below the header, the Department of Environmental Health & Safety logo is visible, featuring icons for fire, radiation, biohazard, and chemical. The main heading is "Radiation Safety" with a red radiation symbol. A navigation menu includes "What's Inside", "Services", "Contact Us", and "Campuses". The "What's Inside" menu is expanded, listing various safety topics. The main content area is titled "Radioactive Material Training" and provides information about the required on-line training module, "Radiation Safety Orientation", and the "Record of Training" form. The page also mentions annual in-person training offered by the Radiation Protection Division (RPD).

UNIVERSITY OF MINNESOTA  
Driven to Discover™

myU > One Stop >

Search U of M Web sites Search

Department of Environmental Health & Safety

Radiation Safety

What's Inside Services Contact Us Campuses

Home > Radiation Protection > Radioactive Materials > Radioactive Material Training

## Radioactive Material Training

All University of Minnesota faculty, staff, and students who require access to areas where radioactive materials are used or stored must complete the on-line training module, [Radiation Safety Orientation](#). This module serves as a prerequisite to the training listed below.

Anyone who requires authorization to use or handle radioactive materials must also successfully complete the on-line training module, [Radiation Safety for Radioactive Material Users](#).

Upon successful completion of this on-line training an individual will be authorized to work under a Radioactive Materials permit at the University provided they have completed and documented specific protocol and lab orientation. The "[Record of Training](#)" form may be used to document this initial orientation and the annual refresher training that is required.

The Radiation Protection Division (RPD) offers annual in-person training as a part of its audit processes. The RPD

# Pre-cruise Planning

Long lead time items

Travel into Canadian water

Minimum of 3 months prior

Much longer for other ships  
and other countries

The screenshot shows the U.S. Department of State website with the following elements:

- Header:** U.S. DEPARTMENT OF STATE, DIPLOMACY IN ACTION. Includes a search bar and navigation links for Secretary Kerry, Media Center, Blog, Travel, Careers, Business, and Youth & Education.
- Navigation Menu:** ABOUT STATE, POLICY ISSUES, COUNTRIES & REGIONS, ECONOMICS, ENERGY & ENVIRONMENT, ARMS CONTROL & INTERNATIONAL SECURITY, CIVILIAN SECURITY & DEMOCRACY, PUBLIC DIPLOMACY & PUBLIC AFFAIRS, ASSISTANCE & DEVELOPMENT.
- Breadcrumbs:** Home » Under Secretary for Economic Growth, Energy, and the Environment » Bureau of Oceans and International Environmental and Scientific Affairs » Fisheries, Marine Conservation, Ocean and Polar Affairs » Oceans and Polar Affairs » Marine Scientific Research Authorizations » Research Application Tracking System (RATS)
- Section Title:** Research Application Tracking System (RATS)
- Text:** Welcome to RATS, an online data management system designed to improve the transparency and efficiency of the Office of Ocean and Polar Affairs' (OPA) implementation of the marine scientific research consent regime established by the Law of the Sea Convention. Through RATS, an applicant can generate an application, track its progress, receive authorization documentation, and submit reports. RATS increases the speed with which critical information is relayed between the applicant and the official channels responsible for obtaining and/or issuing authorizations.
- Text:** Applicants must obtain a RATS username and password from OPA in order to submit an application and track its progress. First time applicants are encouraged to contact OPA to obtain a RATS tutorial.
- Text:** RATS application and consent records are not available for public reference until after the approved research has been conducted. The resulting research data and reports are also not available for public access through RATS, however the preliminary and final report transmission dates are available to prove the applicant's satisfaction of coastal State obligations.
- Section Title:** Guidance to All Applicants
- List-Group:**
  - Applicants are encouraged to develop their research plans in consultation with scientists from the coastal State(s).
  - It is the responsibility of either the chief scientist or his/her sponsoring organization to seek coastal State consent through OPA in a timely fashion; the Law of the Sea Convention states that applications must be received by the coastal State no later than six months prior to the expected starting date of the marine scientific research, however many coastal States will accept applications with less than six (6) months' lead time, but not less than three (3) months' lead time.
  - A file number will be assigned to the application and provided to the applicant. This file number should be referenced by the applicant in all written and oral correspondence with OPA.
  - All files uploaded to RATS must be in Portable Document Format (.pdf). File names should be concise and should not include punctuation or special characters.

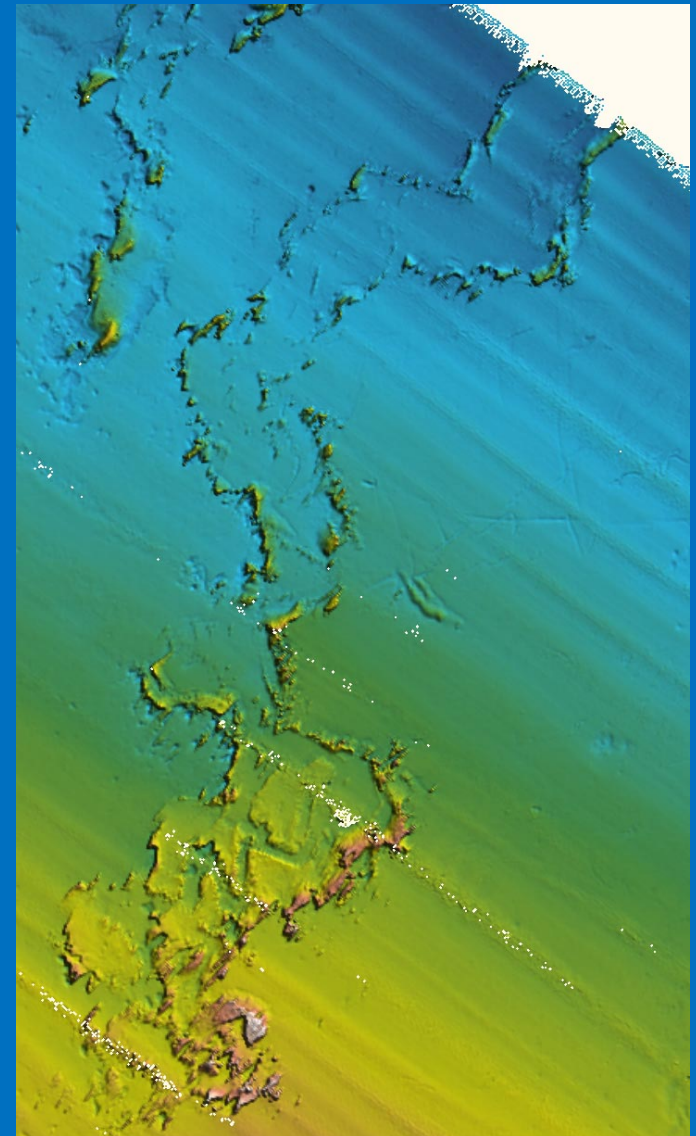
# Pre-cruise Planning

Long lead time items

Use of specialized equipment

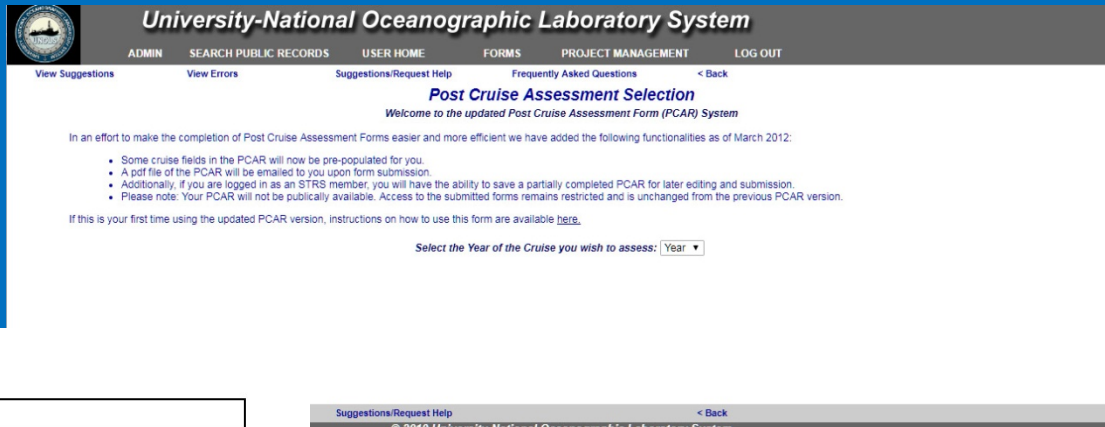
Multibeam – used elsewhere

Triaxus – also used elsewhere, but also complex



# Post cruise obligations

## Post cruise assessment



**University-National Oceanographic Laboratory System**

ADMIN SEARCH PUBLIC RECORDS USER HOME FORMS PROJECT MANAGEMENT LOG OUT

View Suggestions View Errors Suggestions/Request Help Frequently Asked Questions < Back

### Post Cruise Assessment Selection

Welcome to the updated Post Cruise Assessment Form (PCAR) System

In an effort to make the completion of Post Cruise Assessment Forms easier and more efficient we have added the following functionalities as of March 2012:

- Some cruise fields in the PCAR will now be pre-populated for you.
- A pdf file of the PCAR will be emailed to you upon form submission.
- Additionally, if you are logged in as an STRS member, you will have the ability to save a partially completed PCAR for later editing and submission.
- Please note: Your PCAR will not be publicly available. Access to the submitted forms remains restricted and is unchanged from the previous PCAR version.

If this is your first time using the updated PCAR version, instructions on how to use this form are available [here](#).

Select the Year of the Cruise you wish to assess: Year ▾

Suggestions/Request Help < Back

© 2019 University-National Oceanographic Laboratory System

Post Cruise Assessment Report Information	
PCAR ID:	104440
Date Created:	6/11/2019 11:02:00 AM
Date Modified:	6/11/2019 11:02:00 AM

Cruise Information	
Ship:	Blue Heron
Area of Operations:	GL04
Cruise Dates:	5/31/2019 - 6/2/2019
Chief Scientist:	Tedy Ozersky, UMN_LLO
Cruise Number:	BH19-05

PIs and Funding Agencies:	
PI:	Tedy Ozersky, UMN_LLO
Funding Agency:	NSF/OCE/CO
Type of Work:	Sediment geochem
Grant #:	1737368
PI:	Kathryn Schreiner, UMN_LLO
Funding Agency:	INST/UMND/LLO
Type of Work:	Seed Research
Grant #:	

Ship Personnel	
Master:	Rual Lee
Marine Technician:	Jason Agnich

Completer's Information:	
Person's Name:	Kathryn Schreiner
Position on this cruise:	PI/Chief Scientist
Institution:	University of Minnesota, Duluth - Large Lakes Observatory

Assessment:	
1. To what extent were the planned science objectives of this cruise met?	
rating:	91-100%
comment:	
Multicore casts at 6 locations in Lake Superior, with a total of 8 cores collected at each location. Marine tech was always prompt and all cores were collected in a timely manner.	

Assessment:	
2. Rate how well the science party contributed to achieving the scientific objectives of this cruise (pre-cruise planning, communication, adequate personnel, equipment, attention to safety, organization, etc.).	


Extremely useful to Marine Operations - especially if there are comments.

Possibly a new form soon....

[http://strs.unols.org/public/diu\\_pre\\_pcar.aspx](http://strs.unols.org/public/diu_pre_pcar.aspx)

# Post cruise obligations

## R2R – Rolling Deck to Repository



The screenshot shows the homepage of the Rolling Deck to Repository (R2R) program. The header includes the R2R logo, navigation links for 'SEARCH CRUISES', 'DATA TYPES & PRODUCTS', 'COMMUNITY', and 'ABOUT R2R', and social media links for 'Contact Us' and '@R2RDATA'. The main banner features an aerial view of a beach with the text: 'Providing access to and ensuring the preservation of national oceanographic research data.' Below the banner, there are three columns of text: a main introductory paragraph, a paragraph about global capability, a paragraph about data submission to NOAA NCEI, and a paragraph about documentation and standard products. On the right side, there is a 'Research News & Updates' section with a 'Tweets by @R2Rdata' widget showing a tweet about a ship visit to WHOI's R/V Atlantis.

<http://www.rvdata.us>



# www.rvdata.us

## R2R Cruise Catalog

Contact Us | @R2RDATA









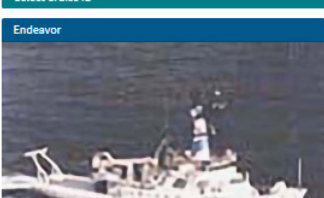

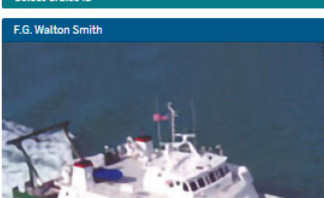

R2R ROLLING DECK TO REPOSITORY

SEARCH CRUISES DATA TYPES & PRODUCTS COMMUNITY ▾ ABOUT R2R ▾

Search Cruises [Home](#) / [Search Cruises](#)

Search by Keyword (ex. cruise id, device type, vessel name) **GO**

Vessels Data Sets

<p>Alpha Helix</p>  <p>Select Cruise ID ▾</p>	<p>Atlantic Explorer</p>  <p>Select Cruise ID ▾</p>	<p>Atlantis</p>  <p>Select Cruise ID ▾</p>	<p>Blue Heron</p>  <p>Select Cruise ID ▾</p>
<p>Cape Hatteras</p>  <p>Select Cruise ID ▾</p>	<p>Clifford A. Barnes</p>  <p>Select Cruise ID ▾</p>	<p>Corwith Cramer</p>  <p>Select Cruise ID ▾</p>	<p>Eltanin</p>  <p>Select Cruise ID ▾</p>
<p>Endeavor</p>  <p>Select Cruise ID ▾</p>	<p>Falkor</p>  <p>Select Cruise ID ▾</p>	<p>F.G. Walton Smith</p>  <p>Select Cruise ID ▾</p>	<p>FLIP</p>  <p>Select Cruise ID ▾</p>



## Blue Heron

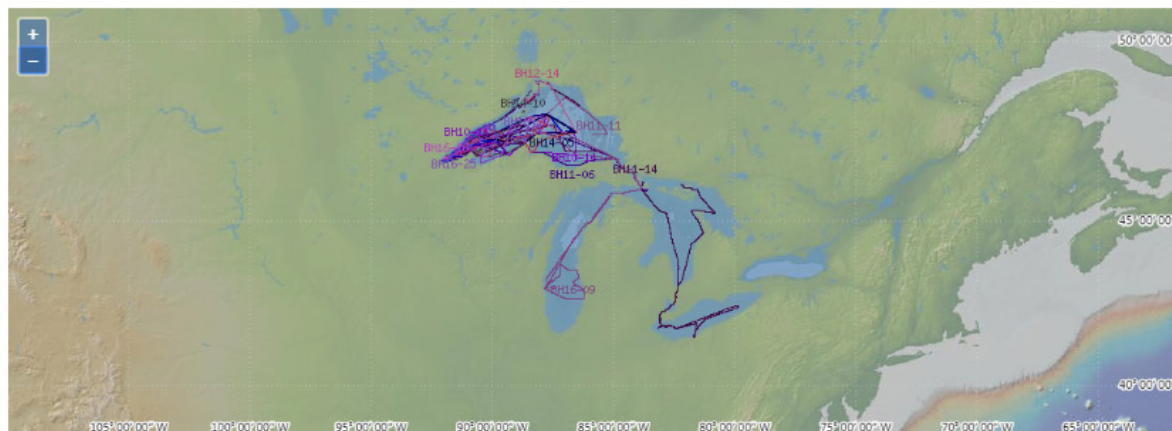
[Home](#) / [Search](#) / Blue Heron

Operator: University of Minnesota Duluth

### Blue Heron



Select Cruise ID ▾



Filter List

&lt;&lt; 1 2 3 ... 21 &gt;&gt;

Results per Page ▾

CRUISE ID	SUMMARY	START DATE	START PORT	END DATE	END PORT
<a href="#">BH17-21</a>	Project: Fall buoy recovery Chief: Austin, Jay	2017-11-07	Duluth	2017-11-07	Duluth
<a href="#">BH17-20</a>	Project: Department of Natural Resources Lake Superior Hydroacoustics Project Chief: Blankenheim, Josh	2017-10-31	Duluth	2017-11-03	Duluth
<a href="#">BH17-19</a>	Project: Near Inertial Coastal Experiment: Leg 3 Chief: Kelly, Samuel	2017-10-16	Duluth	2017-10-20	Duluth
<a href="#">BH17-18</a>	Project: LIM 5011 Data Collection Chief: Schreiner, Kathryn	2017-10-07	Duluth	2017-10-07	Duluth
<a href="#">BH17-17</a>	Project: Ecology Laboratory Student Cruises 3 Chief: Kolbe, Steven	2017-09-25	Duluth	2017-09-25	Duluth
<a href="#">BH17-16</a>	Project: GEOL 3800 Principles of Geophysics Class Cruise	2017-09-22	Duluth	2017-09-22	Duluth



# What you need to know about R2R as a chief scientist

- You are not responsible for submitting routine underway data to a repository.
- Post-cruise you will receive an email asking you to release data – you can decline (and we'll ask again periodically.) R2R does not release data publicly without permission.
- After you release, you can point people to R2R if they ask you for underway data. You can use the standard products & QC dashboard.

