

BIOLOGICAL OCEANOGRAPHY *at sea* –Spring 2020 Block A



The pages below show the proposed cruise track and provide some advice on what to bring to give you an idea of what to expect. **You need to email (zij@duke.edu) with your expression of interest (including any dietary restrictions) by Oct 31 indicating that you are committed to attending. You will be notified by Nov 10 so that all can plan accordingly.** It will be a lot of fun and you'll learn a lot, but you'll work hard too.

* There may be additional space available after the deadline. For more information, please contact Gwendy Womble at ghw5@duke.edu

Quick Facts:

- A hands-on, experiential *Biological Oceanography* class using Duke University's new 77' catamaran vessel: *R/V Shearwater*
- Cruise Dates: January 11-20, 2020, departs/returns Miami
- Ports of call: Key West, Dry Tortugas National Park, Fort Myers, Everglades, Miami
- Travel Dates: depart (as a group) from Beaufort January 10
- Course Fee \$1700 (plus RT airfare New Bern to Miami)
- There is no internet on the ship while at sea, but it may be available at ports
- Emergency satellite phone, radio and other forms of communication are available
- You need to be mature and self-sufficient and be able to contribute as part of a team working together in close quarters
- Sampling, snorkeling and sunning among other activities in tropical waters
- Students are expected to help in the operation of the vessel (e.g. help prepare meals, maintaining a clean ship, etc.)
- ~**paragraph declaration of interest, including any dietary restrictions due: Oct 31 (Nov 10 notification). There may be additional space available after the deadline. For more information please contact Gwendy Womble at ghw5@duke.edu**
- 8 undergraduates will be part of the team, with instructors and crew for ~14 total aboard
- Classwork will consist of hands-on sample and data collection, real-time data analyses, lectures, videos and companion reading

This is a unique chance to learn biological oceanography IN PRACTICE as part of a team on a research cruise on Duke's newly constructed research vessel *R/V Shearwater*. This experience is onboard a working ship at sea. It is not dangerous, but it is not a luxury cruise liner either. It is a communal experience since everyone lives and eats together on a relatively small ship. In many ways, it is a lot like DUML.

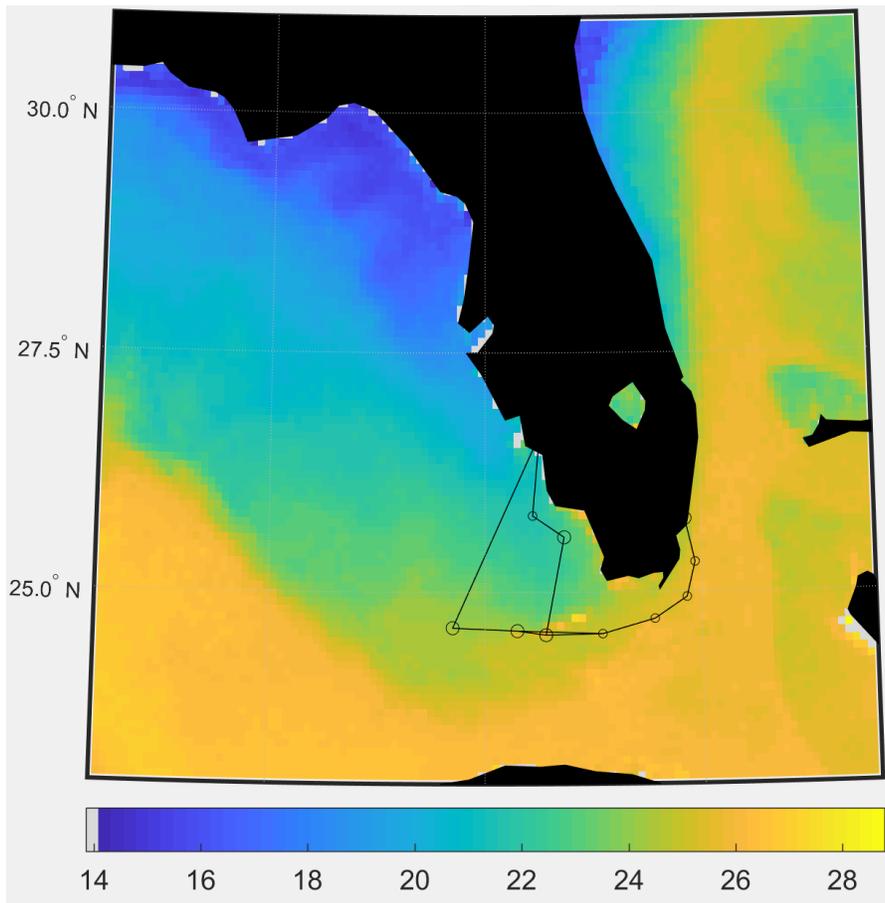
Biological Oceanography *at sea*

Dr. Zackary Johnson, Associate Professor, Duke University, zij@duke.edu



More photos and video tours of the R/V Shearwater are available here:

<https://duke.box.com/s/319q34v8ztst2ecp9f432b4xxnfkc41a>



Projected Cruise Track for January 2020 with expected Sea Surface Temperature



Students moving Items for past cruises

SOME ADVICE AND WHAT TO EXPECT WHEN GOING TO SEA

An oceanographic research cruise is on a research vessel and has certain unique and perhaps unexpected characteristics. Most people's first impression is that the ship is 'industrial' and indeed it is a working ship. The *Shearwater* is a state-of-the-art multi-purpose ocean research and teaching vessel newly constructed for Duke University. While it is of the highest quality, it is not a luxury cruise liner. As a participant, you need to be somewhat hardy, a doer, someone who is open to new ideas and be able to work as part of a team who lives together in close quarters. It is a communal experience since everyone lives, eats and works together on a relatively small ship. In many ways, it is a lot like DUML. You also need to be self-aware; even though it is not dangerous per se, there are dangers. Being aware of these situations, locations, etc. is the biggest step towards avoiding a bad situation. The overwhelming majority of cruises occur without incident. The captain, crew and instructors and ground support staff work hard to minimize exposure to risks and educate team members to best safety practices.

Class

This class will be based on experiential learning – taking samples, collecting data, processing results and interpreting patterns. We will focus on core concepts in biological oceanography including the abundance, diversity and activity of organisms. We will learn to identify major physical, chemical and ecological processes that affect these patterns, and analyze the impact of biology on ecosystems. Like other classes we will have demonstrations, lectures while at sea, videos and assigned reading. As part of this unique class experience, you may have to work strange hours or stand 'watch.' This simply means that your experience will not be a 9 am - 5pm job. For example, one group might sample 12am-12pm and the other 12pm-12am. Alternatively, we may sample from 4am-12noon, then have the afternoon off for snorkeling or wildlife viewing. There are no days off at sea. Part of being at sea is being flexible and taking advantage of opportunities that present themselves (e.g. some weird, but exciting feature in the water) or challenge us (e.g. weather).

Life at Sea

This is a communal experience, with everyone living aboard together. We will learn together, prepare meals together, eat together, and clean together. There is no prior knowledge about life-at-sea that is required to participate in this class. While the focus is on learning, we expect this to be an extremely fun trip. Ports of call (Key West, Dry Tortugas, Fort Meyers, Everglades, Miami) will bring new food, cultures, swimming/snorkeling and wildlife viewing opportunities among others.

Because the trip is in the surrounding waters of Florida, we expect the weather to be favorable, but our schedule will remain flexible to best take advantage of the opportunities available.

YOU WILL BE PROVIDED

- a standard issue duffle bag to pack all of your personal belongings – you will receive upon arrival at DUML
- laundry bag
- mask, fins, snorkel
- lab notebook

- as the inaugural class aboard the new Duke vessel, an amazing experience!

The ship will have:

- A shared stateroom with bunk-beds (maximum 4 bunks per space)
- Bed sheets, blankets, pillows
- towels (1 per person)
- basic bar soap
- toilet paper
- 1 toilet for all 14 people to share
- 1 shower for all 14 people to share (an additional outdoor shower is available) – each group will be allotted a shower window. Showers must be brief to conserve freshwater.
- Large screen for viewing of movies, etc.

ITEMS TO BRING WITH YOU

Everything must fit within the provide duffel bag

- Valid passport
- Closed-toed shoes (required, tennis shoes ok): no sandals on deck; a second pair of light duty shoes for inside (dry conditions)
- "Long" clothes (long pants/sweats, long sleeved shirt/hoodie) – it can be cold inside
- Shorts and "not-your-best" t-shirts for deck work (clothes tend to get dirty on ships...)
- Swimsuit
- Pajamas or other sleepwear (that are decent in public)
- Hat (required for safety drills)
- Alarm clock, watch or cell phone to set a wakeup alarm
- Sunscreen, Sunglasses
- Personal hygiene items (shampoo, lotion (seawater can make your skin dry), toothpaste, etc.)
- Note: NOTHING goes down the toilets on a ship except human processed food waste and little bits of toilet paper. Ship sanitation systems are notorious for clogging, which is a big hassle for everyone.
- Ability to swim, if you plan on snorkel or entering the water.
- Clothing for the whole trip (including daily socks/underwear) – must fit into provided duffel
- OPTIONAL: Light rain gear (optional, but encouraged)
- OPTIONAL: Flip-flops for the shower
- OPTIONAL: Good quality pocket knife
- OPTIONAL: Flashlight
- OPTIONAL: Candy / comfort food (if you "need" something special...)
- OPTIONAL: Earplugs: some ships can be loud: bring earplugs if you are really sensitive to noise
- OPTIONAL: Seasick medicine: Dramamine or Bonine are both available from the drugstore (or student health center) over-the-counter, 1 packet should be enough: most people get over seasickness within a few days of sailing. If you don't think you need it, but find out that you do once *on* board ship, the ship will have some. If you've ever been seasick it is recommended that you discuss seasickness and this trip with your doctor

Academic Items

- Computer with Excel/Word and ODV installed
- Paper / Pens for writing

The ship will NOT have:

- internet
- telephone
- laundry
- house-keeping

Other ship amenities:

- 3 meals a day; snacks
- There is a zero tolerance alcohol and drugs policy on this ship.

You are representing Duke University on this cruise and we expect to present a dedicated, hard-working team that follows all of the rules. This doesn't mean that you won't have fun too! The Chief Scientist has the final say in all scientific matters at sea and is responsible for the scientific party. The Captain has the final say in all matters at sea and is responsible for the safe operation of the ship.