

# SOUNDS OF THE SEA

October 21-23, 2016

**Duke**  
ALUMNI

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Join fellow alumni, family, and friends for a fascinating look at sound in the sea. From marine megafauna to small crustacean inhabitants of salt water, the ocean is filled with a symphony of snaps, clicks, and songs created by the diverse life underwater. Whether for purposes of communication or effect of movement, marine life has been making a lot of noise for many millions of years and we are only beginning to understand how and why their sounds are created. Over the course of this educational weekend, you will have the opportunity to hear from not only Duke's top-notch faculty, but the animals underwater as we collect samples and explore the results.

The weekend begins with an introduction to the Duke Marine Laboratory and a lecture on the principles of ocean acoustics and marine communication. On Saturday, you will spend the day in a combination of engaging lectures and hands-on lab work. In the lectures you will learn about the animals that create much of the sounds below the water's surface and the tools used to study them; while in the labs, you will have the chance to eavesdrop on the chatter underwater, determine which animals are creating the sounds and what they may mean. You'll also have the opportunity to see and use state-of-art equipment that is currently being used in the field by the world's acclaimed scientists in this discipline. On Saturday evening, you can spend your free time exploring the charming, seaside community of Beaufort, which is home to around a hundred Duke students during the year. Everyone will return to the Marine Lab campus on Sunday morning for a few final wrap-up lectures and activities including a field trip out into the waters surrounding Beaufort.

Led by some of Duke's top faculty, it will be an unforgettable and educational Marine Lab experience. Make your reservations soon, as this is one of the Alumni Association's most popular Forever Learning Programs.



## SCHEDULE

### FRIDAY, OCTOBER 21

4:00 pm Registration  
4:30 pm Orientation/Tour  
6:15 pm Lecture  
7:00 pm Reception  
7:30 pm Dinner

### SATURDAY, OCTOBER 22

9:00 am Lecture  
10:30 am Experiments in Lab  
12:45 pm Lunch  
1:45 pm Lecture  
3:00 pm Cont. Lab experiments  
*Free Evening in Beaufort, NC*

### SUNDAY, OCTOBER 23

9:00 am Boat Trip  
12:00 pm Conclusion



## LOCATION

Located on Pivers Island, within North Carolina's Outer Banks, the **Duke University Marine Lab** is adjacent to historic Beaufort, one of the oldest towns in the state. From the Duke Marine Lab and the Beaufort waterfronts, you can see wild horses grazing and egrets or pelicans flying. By air, the nearest airports are in New Bern, N.C., (45 minutes away) or Jacksonville, N.C., (90 minutes away). Rental cars and taxis are available at both airports. There is also a small local airstrip in Beaufort for private planes.

## ACCOMMODATIONS

There are many great hotels, inns and bed & breakfasts along the coast. When you reserve your space in the program, we will send you a list of accommodations in the Beaufort area. (Room pricing will be from approximately \$109 per night, depending on the establishment).

## FITNESS REQUIREMENTS

The physical demands of this program are moderate. The most significant challenge involves the field trip on the ship, specifically boarding and maneuvering on the ship, and potential exposure to sun, wind, and heat. Closed-toe shoes are required on board and in the lab.

## FEES

Program fees are **\$425 per person** and include tuition, refreshments, a reception and dinner, a lunch, lab materials, and the ship excursion. Participation is limited to 36 people. **Children must be accompanied by an adult and must be at least 12 years old, or in the sixth grade.** The program fills quickly, so early registration is recommended.

## REGISTRATION

Registration for this program can be done online at [alumni.duke.edu/marine](http://alumni.duke.edu/marine). For assistance with registration, please call 919-684-2988.

## REFUNDS/CANCELLATIONS

Payment will be refunded until 30 days prior to the program's start date, minus a \$125 per person cancellation fee. All refunds will be returned to the credit card used for the original transaction. Schedules will be carried out as closely as possible, but are subject to change.

**Disclaimer:** Duke University has no responsibility in whole or in part for any loss, death, damage, or injury to person or property or accident, mechanical defect, failure, or negligence of any nature howsoever caused in connection with any accommodations, transportation, or other services. Baggage is at the owner's risk entirely. The right is retained to decline to accept or retain any person as a participant should such person's health, mental condition, physical infirmity, or attitude jeopardize the operation of the program or the rights, welfare, or enjoyment of other participants. We reserve the right to revise the program itinerary as needed.

## PRIMARY FACULTY



### Douglas P. Nowacek

Doug is Repass-Rodgers Associate Professor of Conservation Technology and Associate Professor of Electrical & Computer Engineering in the *Marine Science & Conservation division of Duke's Nicholas School of the Environment*. Doug earned his Ph.D. in a joint program at

Massachusetts Institute of Technology and Woods Hole Oceanographic Institution in 1999, and his B.A. at Ohio Wesleyan University in 1991. Dr. Nowacek's experience lies in marine mammals, technology development, bioacoustics, behavioral ecology, foraging ecology. Sound propagates very efficiently through sea water, and marine mammals take advantage of this medium to communicate and explore their environment. His research is focused on the link between acoustic and motor behavior in marine mammals, primarily cetaceans, specifically, how they use sound in ecological processes like foraging and communication. Another focus of Dr. Nowacek's current research is the effect(s) of anthropogenic noise on marine mammals.



### Sheila Patek Ph.D.'01

Dr. Patek is an Associate Professor in the Biology Department at Duke and oversees the Patek Lab researching the dynamic interplay between evolutionary processes and physics. Patek received her A.B. with honors in Biology from Harvard University

followed by a Ph.D. in Biology from Duke University. She was then awarded a Miller Postdoctoral Fellowship at UC Berkeley. She has received several honors, including a Guggenheim Fellowship, the George A. Bartholomew Award for distinguished contributions to comparative physiology, a Radcliffe Fellowship, a NSF CAREER award, and the Brilliant 10 award from Popular Science magazine. Her research has been funded by the National Science Foundation, National Geographic Society, Hellman Family Foundation, Armstrong Fund for Science, Army Research Office MURI, and others.



BEAUFORT, N.C.