

Data Partnerships, Community Building, and Broader Impacts: A panel discussion

Moderator: Dax Soule, Queens College

Panel:

- Kristin Hunter-Thomson
- Derek Loftis
- John McCord
- Celia Cackowski
- Jillian Eller
- Mike Muglia





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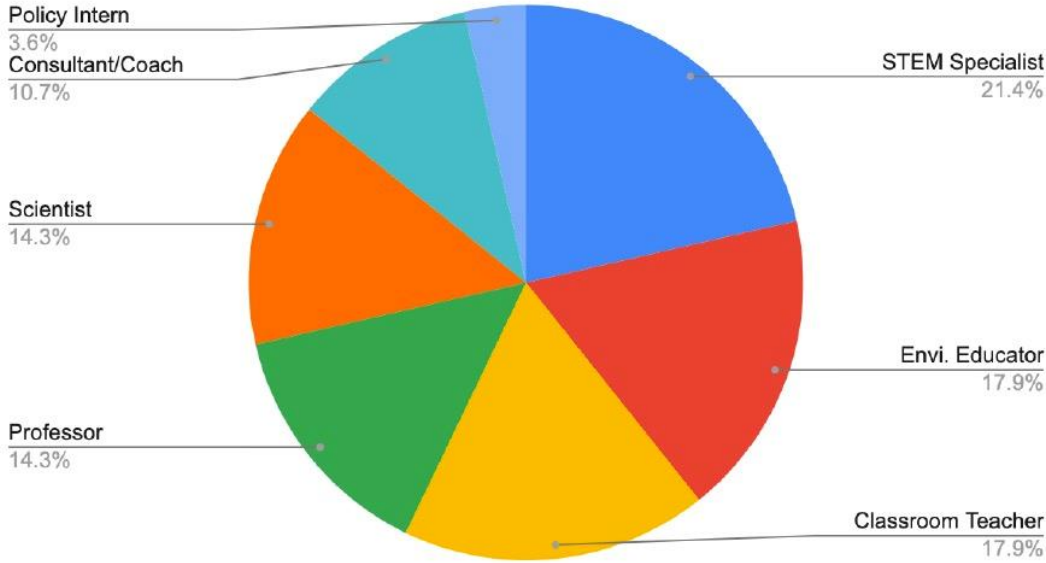




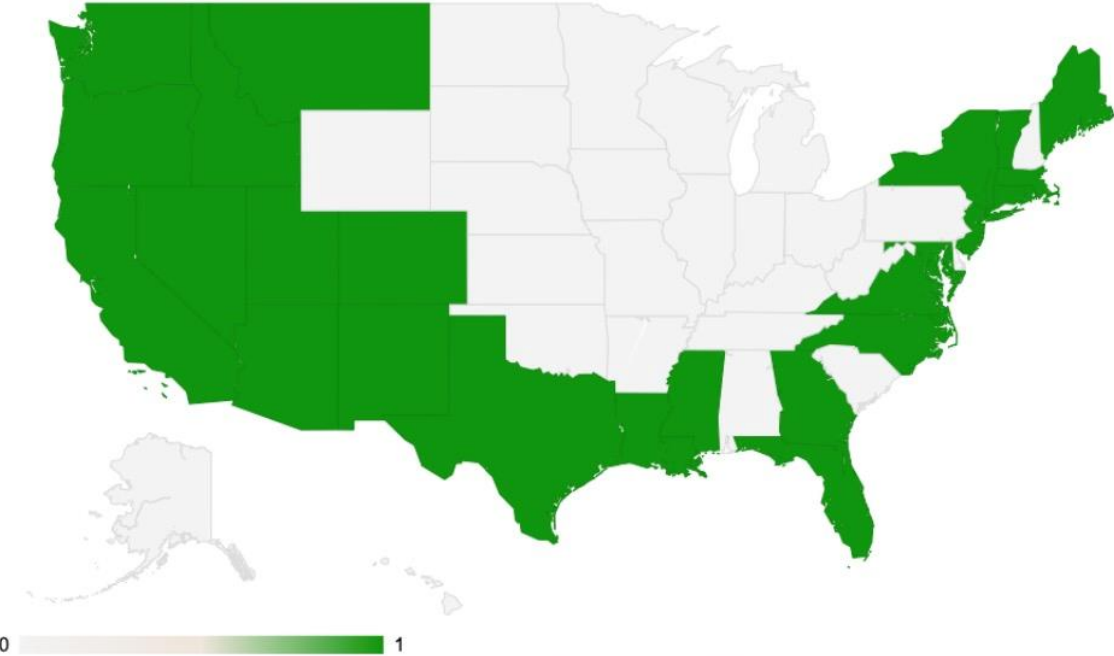
A bit more about me



Percentage of Career to Date



States that I've Visited the Emergency Room





Coastal Studies Institute

A MULTI-INSTITUTIONAL RESEARCH PARTNERSHIP



ECU

**OUTER BANKS
CAMPUS**

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WILLIAM & MARY

VIRGINIA INSTITUTE OF MARINE SCIENCE

- Collaborate with researchers to develop data-based outreach materials
- Work with grad students to develop their science communication skills
- Pilot materials with teacher focus groups both in person and online
- Facilitate PD workshops and field courses for local K-12 educators



Sea Grant **BRIDGE** ocean science education

Satellites and Storms
Using Ocean Observing to Investigate Coastal Storms

Summary
Investigate weather patterns, weather maps and the effects weather has on the ocean, all using real ocean observing system data.

Introduction
Ocean and Atmosphere: Linked Fluids in Motion
The atmosphere and the ocean are both dynamic fluids, ever circulating as they are driven by the uneven heating of the earth and the earth's rotation on its axis. While we often think of the atmosphere and ocean as two separate systems - with weather and wind moving the air, currents and tides affecting the sea - in reality they are two sides of a single air-sea system. The ocean and atmosphere influence and interact with each other in very complex ways. Reflecting this linkage between air and ocean, researchers in the fields of meteorology and oceanography often work together.

We can investigate basic atmosphere-ocean interactions using some of modern oceanography's most valuable tools, satellites. From their orbits high above the earth, ocean observing systems provide global and regional perspectives that reveal the effects that atmosphere and ocean have on one another. Thanks to advancing technology, satellites now collect all sorts of data: ocean temperature, water color (indicating sediment load or phytoplankton density, for example), wind speed and direction, the roughness of the ocean's surface, and more. And we can access this information, plus data from buoys, ships and coastal observing stations, using the internet. In this series of activities, we'll use ocean observing systems to study the formation and impacts of coastal storms.

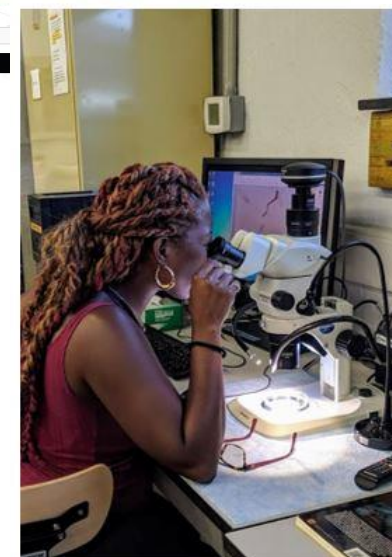
Coastal Storms
But first, let's introduce our subjects, coastal storms. Here in Virginia, we get two main types of severe coastal storms: Hurricanes and Nor'easters. They differ in their region of origin, season, and duration of impact. Hurricanes develop over tropics in late summer and fall. These powerful coastal storms are characterized by high winds, waves and storm surge and heavy rain that results in flooding. They usually migrate quickly, at speeds of 10 to 25 miles/hour. In contrast, Nor'easters, or Nor'easters, are not of tropical origin. They can form right off the North American coast any time during the fall, winter or early spring. They also generate high winds, waves and flooding, but they don't always move very quickly. Although Nor'easter winds are not as intense as those of many hurricanes, they make up for it in duration. Nor'easters may be held in place for days by arctic (Canadian) high pressure systems. As a result, the seas have time to develop to maximum wave size, pounding the coast for prolonged periods.

Data Activity
To investigate these two types of storms, we'll take one step at a time, learning about meteorology and oceanography as we work through **five activities**:

1. What Storms is Coastal Storm? Water Temperature Highs Fuel Air Pressure Lows
2. That She Bland
3. And the Lows Go Round and Round
4. Surf's Up
5. The Gulf Stream: Storm-Maker

Extensions
Tracking the factors that fuel coastal storms

1. SST in a record hurricane year: To see how tropical sea surface temperature varied through the seasons of 2005, sample SST at 20°N latitude and between 60-65°W longitude on or about the 15th of each



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Marine Renewable Energy

