

Observing Ocean Processes with Student-built Ocean Drifters and Time Animations in Google Earth

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ABSTRACT

The Marine Advanced Technology Education (MATE) Center and COSEE NOW are using ocean drifters to teach college students about the interrelationship of ocean processes and understand how oceanography relies on technology to observe and measure the state of the oceans.

- First, we have students build ocean drifters; since the drifters are equipped with GPS transponders, students can watch the movement of the drifter in real-time over the Internet. As students watch the ocean drifter that they helped decorate and deploy, it spurs interest in additional ocean characteristics that are changing at the same time.
- Second, the students download oceanographic data such as SST, chlorophyll, SSH, wind, and pressure collected from satellites and ocean buoys and display it in Google Earth for the same time and geographic extent as the drifter in the water.

This project enables students to be involved in the collection of oceanographic data that is also of interest to local scientists. These drifters have been deployed by students to help support studies addressing HABs, larval transport, oil spills, power plant effluent, and surface circulation.

Ocean Drifters are a great platform for:

1. Spurring collaborations among community college faculty and scientists,
2. Utilizing real-time data to promote scientific inquiry and an understanding of the true nature of science,
3. Sharing how modern oceanography relies on technology to observe and measure the state of the oceans,
4. Aligning curriculum with workforce needs.

