

## 2009 Annual Report: Woods Hole Center for Oceans and Human Health (WHCOHH)

Much activity took place in the Woods Hole Center for Oceans and Human Health (WH-COHH) during 2009. In June, the Center was awarded a \$1.8 million grant from the National Science Foundation for continued research on harmful algal bloom issues and human pathogens in coastal waters. The award is a two-year Accomplishment Based Renewal, and is distributed to researchers at the major research groups in the three constituent institutions in the Center—WHOI, the Marine Biological Laboratory (MBL) and Massachusetts Institute of Technology. In August, the Woods Hole Center was awarded a supplement from the National Institutes of Health for nearly \$300,000 for continuing center research.

During 2009, the Center also solicited applications and made five awards for pilot projects. The awards are for studies on:

- Spatial and Temporal Variability in Beach Water Contamination (Hauke Kite-Powell, Marine Policy Center, WHOI)
- Investigation of Bioactive Lipids in the Harmful Algae *Aureococcus anophagefferens* (Ben Van Mooy, MC&G, WHOI)
- Characterization of Small Molecules Responsible for Allelopathy and Quorum-sensing Inhibition from Marine Bacteria (Tracy Mincer, MC&G, WHOI)
- *Shewanella* Ecotypes of Coastal Waters: Their Distribution and Genome Properties as Tools for Water Quality Assessment (Anton Post, MBL)
- Impact of Currents, Wind and Harbor Water Residence Time on Beach Bioindicators (Becky Gast, Biology, and Dave Ralston, AOP&E, WHOI).

These studies expand the activities of the center.

Research highlights include new findings on harmful algal blooms in the Nauset Marsh System, a major tourist and shellfish resource location. Don Anderson (Biology, WHOI) and his group studied *Alexandrium* cyst seedbeds in the system and identified three sites at which the Nauset blooms originate. Using molecular markers, they also determined that in the fall, the system has an input of harmful algal bloom cells from offshore, which may contribute to the seedbeds.

At MIT, center investigator Martin Polz has expanded the genomic knowledge of *Vibrio* bacteria, finishing the sequencing of 75 genomes from his unique *Vibrio* collection, an addition of approximately 7.5% of the total number of bacterial genomes sequenced. He currently is sequencing 400 plasmids from *Vibrio* populations, which will add about 25% to the plasmid sequence database. This will greatly enhance ability to identify pathogens in coastal systems.

The center investigators continued to publish high-impact papers and leverage new grant support.

—[John Stegeman](#), Center Director

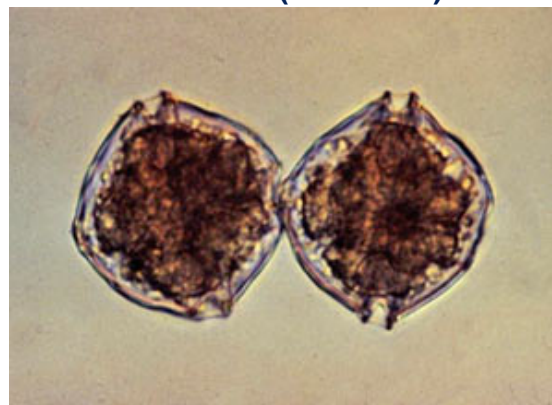
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Research highlights include new findings on harmful algal blooms in the Nauset Marsh System, a major tourist and shellfish resource location. Don Anderson (Biology Department) and his group studied *Alexandrium* (cells shown above) cyst seedbeds in the system and identified three sites at which the Nauset blooms originate. Using molecular markers, they also determined that in the fall, the system has an input of harmful algal bloom cells from offshore, which may contribute to the seedbeds. (Photo by Don Anderson, Woods Hole Oceanographic Institution)

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