

# Global Warming Lessons From the Arctic

Teacher Blogs to Students From Bering Sea Research Site

By **BILL BLAKEMORE**

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Our tiny helicopter swooped out over the wide and sunny Bering Sea, its springtime surface still frozen white. We were east of Nome, Alaska, just south of the [Bering Strait](#), where Russia and America almost touch. After 20 minutes, our pilot found the U.S. Coast Guard Icebreaker Healy -- first a tiny black speck in the far distance.

When we reached it and circled around before landing on the fantail, we could see that scientists had lowered a ramp from the side and were working out on the ice.

More and more now, science expeditions are heading into the [frozen north](#) to study all the exotic life forms swarming in the icy waters before human-induced [global warming](#) melts the sea ice completely. Scientists expect that to happen in summer for the first time in tens of thousands -- if not millions -- of years within the next decade.

They're finding the frigid [white northern seas](#) are in fact teeming, life forms are crawling just under the frozen sea-surface and in every cubic foot of water all the way down to the sea floor, often more than a mile deep.

When they go out on the ice, the scientists always take a "Bear Guard," a young Coast Guard officer who carries a large rifle in case a hungry polar bear, looking for seals, rambles by.

## Studying the Ice

In the belly of Icebreaker Healy, high-tech science labs serve a nonstop rotation of scientists from the U.S., Russia, China, Germany and several other countries, all joining in the scientific knowledge rush trying to discover what life forms have long lived in this remote place before the threat of extinction -- due to the vanishing ice they need to live on -- becomes reality and carries them away forever.

After landing and being assigned bunks in the small rooms shared by the scientists, we [explored the labs](#). We found scientists counting curious looking worms and clams that they'd dredged up from the sea floor.

One room on the Healy serves as the control center for its ROV, or Remotely Operated Vehicle, that carries cameras and traps as it "flies" into the depths, sending back live video pictures of often unknown creatures -- some with scintillating bioluminescence rippling along their veins and looking much like the aliens in the movie "The Abyss" -- just a little smaller.

## **Teaching From the Arctic**

The scientists work day and night, taking full advantage of their precious exploration time, if they've been lucky enough to be granted a berth on the Healy.

Also on board, we found several reporters from different organizations.

The most productive reporter, I soon came to realize, and the one most directly connected to the generation deeply involved with global warming, did not work for a network or a newspaper.

She works for J.C. Parks public elementary school in Indianhead, Md. Deanna Wheeler is a science teacher to the third, fourth and fifth grades.

Wheeler was one of a dozen teachers selected from some 50 applicants in a program run by the National Science Foundation. Her output of information from the Healy eclipsed the output of all us professional journalists.

I found her sitting up on the ship's wide bridge in a seat with a spectacular view looking out over the bright frozen sea. With a laptop on her knees, she was working on the Web site, complete with video blogs and Webinars, that she was constantly sending back to her students at home.

"This is the best place to do it," she told me. "The view's breathtaking."

At times over the coming days I would find her out on the ice, helping the scientists.

"We're looking for critters in the ice right now," Wheeler told me and my producer/cameraman, Clayton Sandell, when we discovered her, bundled up to the eyes, helping scientists ladle slush from the hole they'd drilled through the ice.

"We're gonna see ... how any changes in the ice ... will eventually affect the whole ocean and the food chain," she told us.

We too had noticed how the extreme springtime cold at this high latitude -- immediately south of the Arctic circle where it was sunny but way way below zero -- sometimes had a dampening effect on your speech.

Your circulation system was sending silent alarm signal signals all over your body trying to figure out how best to apportion the warming blood for whatever survival needs were at hand, and the unaccustomed brain of us greenhorns didn't always have quite the ready supply it needed.

## **Reaching Students Timezones Away**

One afternoon, Wheeler showed us her blog. Wheeler's blogs take her kids -- among other places -- out stalking walrus.

With her snapshot camera's video feature, she interviewed scientists like Dr. Chad Jay, who demonstrates in a video clip how he affixes his medieval crossbow arrow to a 21st-century satellite tag, which he then fires (after some very careful stalking, aided by a helicopter) into a walrus' back, apparently with no pain to the walrus.

Dr. Jay and his colleague Tony Fischbach showed us photos from one of their expeditions in which a giant walrus on the ice had barely stirred after being hit with a satellite tag and then clearly went right on napping in the sun.

Her blogs include a number of interviews with scientists, exploring what it means to do the steady, sometimes repetitive work, of science -- but showing her kids (as she explained to us) that the sometimes frightening news about global warming can lead you to places where you find adults trying to learn as much as they can about it.

She told us she thinks one of the best things she can do for her young students is show them that adults are working on the problem, show them that it's not that hard to imagine getting out in the world someday, maybe even as scientists -- maybe even travelling to exotic places.

"They know me, so they can see that anybody can have responsibility to go out and do real research," she told us.

In another of her postings, entitled "Pancakes For Breakfast," she shows her kids back home how the sea surface becomes covered with what look like regular large white pancakes -- when the sea first starts to freeze, before the surface sheet-ice become more solid.

They look like thousands of snowy lily pads.

I asked her if she thought that seeing her, an adult they knew well and trusted, exploring out in the wild world would give them confidence.

"That's one of my personal goals for this trip," she answered, "that they can see possibility, they can do this too, and they can make a difference in the world. That they can become anything they want to be, but also they can become a scientist - and they can see a wide variety of possibilities in life."

## **Inspiring the Next Generation**

And Wheeler's reviews back in Maryland?

"The children were so excited! Mrs. Wheeler is a celebrity at J.C. Parks," said Parks' principal, Kristin Shields.

Wheeler found that her kids, having followed her closely on her regular blogs and Webinars, still had more questions for her after she got back.

"If there aren't any clams on the bottom of the sea, then what will the walruses eat!?" asked one girl in a classroom exchange we sat in on.

"The scientists are working hard to study that," answered Wheeler.

She had told us that it is also important to let the children understand that the adults don't have answers to everything, but that they are working the problem, trying to help the world. It's a realistic and positive approach.

Her students, we discovered, excited by their teacher's bravery and explorations, have even begun teaching the parents.

"Oh she was so excited!" Monica Cherry, a parent and teacher at Parks Elementary, told us of her daughter's fascination during the weeks when Wheeler was sending back her Internet reports.

"She would come home and we would have to go online at home, and she was even sharing it with her aunt and her cousins, and telling us, 'Oh my teacher is over, you know, on the Bering Sea! And here's the blogs!' And we spent quite a bit of time at home looking at all that with her."

Fifth-grader Timothy Wilmot told ABC News, "You have a teacher maybe like 1,000 miles away, and she's teaching you a subject over the computer, and over the phone, and that's like the coolest thing ever to me!"

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