

# field notes

Polar Field Services 17 January 2008



## MBL Science Journalism Fellowship

Training the Translators to Speak the Language of Science

By Emily Stone

Ten new researchers will arrive at Toolik Field Station this summer, ready to take soil and water samples, process them in the lab and draw conclusions about their findings. They will also have essentially no idea how to go about doing this.

But that's OK, because the researchers will be journalists who have gone to Toolik to learn what it's like to be a scientist. They'll be part of the [Marine Biological Laboratory's](#) (MBL) annual Science Journalism Program, which has been revamped this year to put more emphasis on arctic and antarctic fieldwork. The 22-year-old program's goal is to help journalists understand what scientists do in the field



*MBL journalism participants Anton Caputo (L), an environmental reporter for the San Antonio Express-News and Jim Metzner, executive producer of NPR's Pulse of the Planet, filter groundwater they collected at Lagoon Pond, on Martha's Vineyard, MA. Photo: Christopher Neill*

and the lab, so the journalists can do a better job of conveying this information to the public.

"It's designed to let reporters see science through a scientist's eyes," said Christopher Neill, associate scientist at MBL and principal investigator on the NSF-funded project.

MBL will take 10 mid-career science journalists to Toolik each of the next three summers. Three or four of those journalists will also travel to Antarctica's Palmer Station during the following antarctic summer to do similar work there. In previous years, the journalists met at MBL's Woods Hole, Mass., headquarters, where their

fieldwork and lab training focused on coastal pollution in Cape Cod. Some of the journalists then traveled to Toolik to spend time with scientists in a more informal setting.

Starting this year, as part of the International Polar Year, all of the journalist's time will be spent in the polar regions, with a focus on climate change. The two-week arctic curriculum will be divided into two parts. The first week will consist of the Polar Hands-On Laboratory. Journalists will work with PIs from the Arctic Long Term Ecological Research (LTER) program to learn about key questions and research methods in arctic science. They will focus on ongoing, interdisciplinary research on polar environmental change.

The journalists will be divided into groups of two and matched with a PI



*Left: MBL journalism participants in 2006 analyze field data to understand how changing land use and runoff of dissolved nutrients influence the chemistry and biology of coastal waters. Journalists interpret data they collect and prepare power point presentations on their findings. Photo: Christopher Neill*

*MBL continued on page 2*

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so they can do a day of field work, collecting samples and bringing them back to the lab to process. The five areas of research they'll focus on are: the effects of temperature and moisture change on tundra vegetation and soil carbon balance; the role of increased shrub cover on tundra energy balance and feedbacks to climate; the extent of the disappearance of permafrost and its consequences on nutrient cycles and vegetation; how changing thaw depths and vegetation influence the movement of water and nutrients from tundra to fresh waters; and how changes in nutrient delivery to rivers will affect the structure and function of river ecosystems.

The journalists will compile their data, analyze it for trends, and then interpret the significance of their findings in the context of large-scale arctic environmental change. They'll present their findings to their peers and the larger Toolik community in a formal symposium.

During the second week, the journalists will be matched with LTER scientists based on their particular area of interest to shadow in the field and lab. MBL-sponsored journalists who go to Antarctica will work side-by-side with scientists from the Palmer Station LTER.

The journalists gain an appreciation for how tedious much of the scientific process is, Neill said. For example, they learn about prepping samples and doing wet-to-dry weight conversions, while having to make judgment calls every step of the way on how to analyze and interpret the data.

For their part, the scientists learn that journalists often have little formal scientific training, Neill said. And the scientists start to appreciate the journalists' need to make research understandable and engaging enough to attract readers, viewers or listeners, something which scientists can bristle at if they think their



Reporters survey the view of the Sagavanirktok River, looking south toward Alaska's Brooks Range. Photo: John Hobbie

work is being oversimplified.

Plus, everyone gets phone numbers to call when the next big story breaks. Past participants have gone on to do stories on arctic science for *National Public Radio*, *Science*, and others.

"We hope that they can carry some of our message to the general public and make people aware of what we are finding," said Bruce Peterson, senior scientist at MBL and the Arctic LTER's coordinator for stream research, who has worked with journalists at Toolik for many years.

Peterson said he talks to journalists about Toolik's natural history, the LTER research there, and what they've seen happening to the whole arctic ecosystem as the result of climate change. For example, he tells journalists about his team's research that has shown that a small amount of additional nutrients can cause the river to go from bare rocks to completely moss covered. Or how the open-water season in the area's rivers is starting earlier in the spring and ending later in the fall.

The journalists are generally amazed at the extent of the changes, he said.

"They get wide-eyed and say, 'is this possible?'" he said.

John Hobbie, the Arctic LTER director and co-principal investigator on the

journalism program, said getting word out about research is "part of our job as scientists. ... Having good science writers is a very important thing. They're the translators in terms of what the average person knows." ●

*Emily Stone is a freelance writer in Chicago.*

## field notes

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Our thanks to those who provide news updates, photos, story ideas, and encouragement. Send feedback/suggestions to: [kip@polarfield.com](mailto:kip@polarfield.com)

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**New year, new name.** Right around the holidays, we learned that NSF had formally approved the request to change the primary name on the research support and logistics contract from VECO to CH2M Hill (the latter had purchased the former). We are delighted to say that Polar Field Services is now officially part of CH2M Hill Polar Services—"CPS," for short.

## alaska

December was a quiet month for field support, so we headed out to do some reconnaissance work. Alaska staff member Matt Irinaga traveled to Shishmaref, located on a barrier island off Alaska's Seward Peninsula. There, he introduced himself to community members, and previewed both the natural environment and the village itself to better understand what resources might exist for CPS-supported research projects considering work there.

"I went to Shishmaref to discuss land-use issues, check out local resources, and speak with potential guides," Matt explains.

Shishmaref has gained international attention in recent years because it has been devastated by the consequences of climate warming—thawing permafrost and shrinking sea-ice form a one-two punch that would have any community on the ropes. A traditional subsistence culture, the people of Shishmaref hunt, fish, and travel over the sea-ice bordering their island. But as it shrinks, making these activities more problematic, the ice no longer shields the tiny island



Boulders along the beachfront at Shishmaref, AK, are meant to protect the coastline from further erosion.



Make maps like this one at [www.armac.org](http://www.armac.org)

from the full impact of fall storms. Heavy wave action beats at the shoreline, which grows ever more unstable as the permafrost thaws. Some big storms have had huge impacts, and the community has lost roads, homes, and hundreds of feet of beachfront to storm surges in the last few decades.

In 2006, the people of Shishmaref voted as a community to relocate to Tin Creek, about 12 miles from Shishmaref.



Shishmaref community leaders meet with Matt Irinaga. L-R: Karla Nayokpuk, Luci Eningowuk, Stanley Tocktoo, Howard Weyiouananna, Albert Olanna, Donna Barr. Photos: Matt Irinaga

The move is to be completed in 2009.

After canceling several earlier attempts due to storms, Matt Irinaga visited Shishmaref early in December. He writes, "I met with several people in the community but most notably the Shishmaref IRA [Indian Reorganization Act] village council. I found the whole village extremely friendly and helpful and interested in any science activity that may directly or indirectly affect the village. Shishmaref has received a lot of state, national and international attention resulting from problems with coastal erosion due to lack of sea ice and thawing permafrost. They are literally seeing their homes wash away to the sea. Consequently there is a huge interest in all scientific activities and a willingness to help. It was a really enjoyable trip and I'm thankful for their help."

Follow developments in Shishmaref via the [Shishmaref Erosion and Relocation Coalition website](#). ●

Sky dancing: The aurora lights Summit Station.  
All Summit photos by Robert Kummelehne.



# greenland

## Summit Station

The low point at Summit came as it did for all of us on December 22<sup>nd</sup>—[winter solstice](#), the moment when the sun is at its lowest in the northern sky (which is actually below the horizon at Summit). “We had some clear skies, some auroras, and with the full moon’s arrival on Sunday, the darkness of the winter solstice was brightened just enough, to let us know that we have only 38 more days until the sun’s return,” wrote Robert Kummelehne from Summit’s helm.

All four Summiteers joined us on the roof of the world after spending a winter at Palmer Station on Antarctica’s peninsula, taking just a few weeks off between contracts. This means that they observed June’s solstice as an occasion of darkness from the opposite end of Earth. Robert wrote that on December 22, “I thought about the solstice we shared 6 months earlier at Palmer Station by jumping into the frozen, 28F, Southern Ocean.”

As expected, December was marked by windstorms followed by periods of snow clearing. But right around

Shoveling Olympics.



Summiteers attempt to photograph firn densification in “Bob’s Boreholes.”

Christmas, “The wind seemed to take its own Christmas vacation,” wrote Robert. The team enjoyed a quiet holiday, taking some much deserved time off from their shovels. Just around January 1<sup>st</sup>, a week-long blow finally ended, revealing fresh drifts and signaling another round of the “shoveling Olympics.”

Temperatures plunged early in January, making efforts to complete science tasking outdoors a challenge. During the second week in January, the team attempted tasking for “[Bob’s Boreholes](#)” (so-named for the lead investigator, Bob Hawley, of Scott Polar Research Institute). This project uses an optical technique to study firn densification in shallow boreholes; once monthly the science technicians take a special camera out to capture images of the walls of these boreholes; special analysis turns the resulting images into information about how (among other things) the layers of snow and ice are compacting.

The first attempt to get borehole measurements in January failed due to bitter cold. “As we packed up the Argo [the all-terrain vehicle], temperatures hung around -45F, but within an hour, the wind dropped and the temps fell to around -60F,” wrote Robert. “Both portable generators began to experience problems, while the camera was down the borehole. After an hour and four attempts at the first hole, we decided to give up and wait for warmer weather.”

At this writing, with temperatures dropping even below the -60F mark, the tasking remains to be done in spite of several attempts. Baby, it’s cold outside.

Meanwhile, as signaled by the winter

solstice, the darkest part of the year is over; the light on the horizon brightens just a bit each day at Summit. Sunrise is expected for the first time in 2008 on January 29<sup>th</sup>. Our team is counting the days. ●

## in the media

Jim Maslanik explains the difference between old and new sea ice in [this](#) article. There is less and less of the former, which suggests arctic annual sea ice melting may continue increase.

University of California scientists lead [new research](#) that finds evidence of ice sheets during a period of extreme warming over 90 million years ago—the finding of which overturns generally accepted theories that Earth was too warm during the “Cretaceous Thermal Maximum” to support ice sheets.



Inuit children from Clyde River, Baffin Island, Nunavut. Photo: Elizabeth Thomas

Graduate student Elizabeth Thomas [writes](#) about her experiences as a member of (University of Buffalo) [Jason Briner’s team](#) at Clyde River, Baffin Island, during the 2007 field season.

“It’s all about heartbreak and disappointment,” notes an Inuit reindeer herder in [this](#) article. His 3,200 animals (the only herd in the Northwest Territories) have gone missing.

The US Fish and Wildlife Service missed its January 9 deadline to rule on whether polar bears should be listed as a threatened species under the Endangered Animals Act—and environmental groups have given notice they intend to sue. Read it [here](#). ●

## Front-Row Seat at the IPY: The *field notes* Electronic Newsletter

**Armchair scientists can follow researchers (and their support team) throughout the year.**

As the arctic logistics provider to the US National Science Foundation, we enjoy a wide-ranging vantage point on research conducted in the Arctic, and unique access to the myriad of scientists doing the work. The projects we support are interesting, germane to some of the most important issues of our day, and a great adventure, both for the scientists and for those of us who assist them in the field. With *field notes*, we bring the research experience to a lay audience.

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Polar Field Services / CH2M HILL Polar Services (formerly known as VECO Polar Resources)

**COVER STORIES:** It's a snowmachine traverse! A helicopter-supported sea-ice camp! An instrumented balloon! In each edition, we explain a research project in simple terms by providing information on the science questions and on the field work itself.

**FEATURETTES:** What's it like to talk to politicians about your work? Or to be a famous writer at Summit Station with cutting-edge atmospheric chemists? We write to those who can answer these kinds of questions. They speak directly to our readers, providing commentary that is sometimes funny, sometimes serious—and always thought provoking.

**FIELD UPDATES:** Who's at Toolik Field Station this week? Did the traverse team make it to Summit Station? Where are the caribou this week? How many ice cores were drilled? Our colleagues in the field give us updates, which we pass on to our readers. This just in...

**WANT MORE!** It's just a click away. All of our stories include links to websites for more information.

**IN THE MEDIA:** Polar bears? Flags at the bottom of the sea? Where's the sea-ice extent? We routinely scan the Internet for stories about life and science in the Arctic, and include links to interesting stories.

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PICTURED: For research exploring the interactions between human communities and sea ice, a dogged trip near Qaanaaq, Greenland, invites researchers and leuts from across the Arctic. Photo: Andy Mahoney Graphics: Susan Zager

# Come and See the Show! 2007 Fall AGU

It's impossible to describe the frenzy—mental and physical—that is the Fall American Geophysical meeting. It's a whirl. For his last [post](#) covering the meeting, Real Climate's Raymond T. Pierrehumbert (University of Chicago) used a circus metaphor, before morphing to the image of a medieval faire: "Our own faire is a marketplace of ideas, . . . Like a medieval faire, this is a social event as well — a time of feasting and revels, of renewing old friendships, and of making new ones. Happily, any brawls we have here are rather genteel ones." Professor Pierrehumbert offers a climate scientist's-eye-[view of the proceedings](#) on the blog.

At this year's AGU meeting in San Francisco, the *field notes* team participated in a poster session on IPY education and outreach. We spent one

morning talking about our "Front-Row Seat at the IPY: The *field notes* electronic newsletter." In addition to sharing our view at the AGU, we learned about other projects aiming to bolster polar education and outreach:

The [New York City International Polar Weekend](#), February 2-3, 2008. Hosted at the American Museum of Natural History with NSF funding, this celebration of the second half of the International Polar Year features some of "our" researchers: [David Holland](#), [Jason Box](#), [Michael Studinger](#), and [Max Holmes](#), to name a few. Arctic history, research, adventure, culture, art, and more are to be showcased in a two-day festival. It's family-oriented and free with admission to the museum.

[Beyond Penguins and Polar Bears](#), an informational blog (with an online

magazine for kids by the same title launching next month) aims to provide ideas and material to elementary school teachers.

San Francisco's Exploratorium museum brings us [Ice Stories](#), a site that allows viewers to "follow" researchers around as they conduct their polar work. For now, the stories are antarctic in theme; come spring, the site will feature researchers who work in the Arctic as well.

[The Polaris Project](#), the outgrowth of Max Holmes' (Woods Hole Oceanographic Institute) previous work on [Student Partners](#), is accepting applications for undergraduates interested in participating in a field hydrology course in Siberia this summer. The project has a new [website](#), which features a [blog](#) written by Holmes. ●