



# The Antarctic Society

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## ANTARCTICA'S SCIENCE IS MORE POPULAR THAN EVER

Bill Meserve's "An Antarctic discovery," page 2, rounds out our reports based on talks given last July during the Society's Gathering at Treasurer Paul Dalrymple's coastal home in Port Clyde, Maine. The October 2016 newsletter has other papers that resulted from talks at the July Gathering.

Consideration is being given to a possible next Antarctic Gathering in the summer of 2018. Separately, thought is being given to a possible assembly that will be limited to 1957-1958 Antarctic IGY alumni. Please give Paul Dalrymple or me your ideas. Our emails are to the left.

This season is my fourth lecturing aboard an Antarctic cruise ship – the Holland America Line's *Zaandam*. The three 3-week voyages this time are a bit different from past seasons. All three cruises have sold out; the so-called Christmas cruises, which take place over the holidays, were well below capacity in prior years. Passengers this time are, if possible, even more enthusiastic than before. Lectures by my colleagues Dave Bresnahan, Scott Drieschman, and me have pushed the ship's theater almost beyond capacity. Q and A sessions following lectures have been spirited and thoughtful.

One of my lectures, which I call Antarctic Ice 101, has the inevitable connection with global issues. Try as I might to focus entirely in my talk on what is happening in *Antarctica* ("just the facts, ma'am"), a few passengers over the years have jumped on the, for some, emotionally charged connection with global warming, asserting that scientists are politically motivated and Earth is cooling, or not changing, or – whatever. What's new is that I scarcely have to open my mouth in rebuttal: other passengers spring to the defense of the scientific findings I've just presented!

Guy Guthridge

## **An Antarctic discovery**

by Bill Meserve

Although I'm now a lawyer and have been for many years, during the Antarctic summer of 1959-60 I was a member of a geology expedition in the McMurdo Sound area headed by Robert L. Nichols, the Chair of the geology department at Tufts University.

Bob Nichols first went to the Antarctic in 1948 as the chief scientific officer for the Ronne Antarctic Research Expedition, and he and Bob Dodson still hold the record, I believe, for the longest dog sled trip (in terms of duration, not distance) in Antarctica. He returned for the IGY in 1958-59 and subsequently went back at least twice. He also led field expeditions to Inglefield Land in the northern part of Greenland, on one of which I later accompanied him. Bob believed in taking undergraduate students as his field assistants, and by doing so he instilled incredible enthusiasm for field geology and the Antarctic in many of them. Indeed, his greatest contribution to studies of polar geology might not have been his own work, but that of his former Tufts students like George Denton and Hal Borns, who subsequently returned to the Antarctic many times on their own and established the outstanding Antarctic studies program at the University of Maine, and Parker Calkin at Ohio State.

Where do I fit in? I had taken freshman geology at Tufts and had done very well in the course, but I had no intention of becoming a geology major. I had, however, worked for a summer backpacking heavy loads as a hutman for the Appalachian Mountain Club in New Hampshire, and I had also spent a summer in Greenland working for the U.S. Weather Bureau. Bob knew that I could carry heavy loads in bad weather, and since he planned to manhaul sleds and then camp and backpack in the Wright Valley (a dry valley

in southern Victoria Land), he was looking for someone to help with the logistics. Essentially, I was recruited as a talking dog, though in the end I think I contributed as much to the geology as any of his field assistants.

Why did Bob (or "Dr. Nichols" as we called him then) decide to manhaul and backpack? There were two reasons. The most important was that we could control our own destiny. By manhauling we could maximize our days in the field and manage the duration of our stops without being dependent on favorable weather conditions and the availability of helicopters from McMurdo. The second, and less obvious, was that Bob Nichols was an incredible romantic when it came to Antarctic history. His heroes, Scott and Shackleton, had manhailed, so he wanted to do so too. In fact, we were the first expedition to extensively manhaul sleds in the Antarctic since Shackleton had done so in 1916. Several others have, of course, subsequently followed our example.

## **The plan**

Our plan was to manhaul from Marble Point to Granite Harbor and back studying raised beaches (evidence of the magnitude of previous glacial activity) and other geomorphological features. When the ice started to break up, we would be airlifted to the Wright Valley to camp and backpack and study evidence of multiple glaciations there. Our core party was four people: Bob Nichols, Bob Goodspeed, Roger Hart, and me (the latter three all undergraduates at Tufts). For the manhauling segment we were joined by Bob Rutford, then a graduate student in Minnesota, who was also on his first trip to the Antarctic and was interested in learning about the utility of manhauling. We had three sleds: two banana sleds and a Nansen. Bob Nichols and I (mostly me) pulled the Nansen, Bob Rutford and Bob Goodspeed pulled a banana sled, and Roger

Hart pulled a smaller and lighter banana sled and served as the “pioneer,” scouting out the best routes over the ice for the rest of us. Bob Goodspeed and Roger shared a tent, Bob Rutford and I shared another, and Bob Nichols had his own. It was a phenomenal experience in perhaps the most beautiful place I have ever been.

While manhauling, we had experiences of particular interest to those familiar with Antarctic history. The first occurred shortly after we had left Marble Point. We had been sledging for only a few hours when someone noticed a small black object on the ice in the distance. We sledged over and found a piece of a leather strap, about two feet long. From its age and dimensions, it was clear that it had fallen off a sled, presumably a sled used by one of the Scott parties that had traveled along that coastline in 1911-12. It was a needle-in-a-haystack moment.

A few days later we arrived at Cape Roberts at the head of Granite Harbor. A large cairn is there, and we were fascinated to pull out a metal container bearing names from Scott’s Western Parties, his Northern Party, and the Edmund Hillary/Bunny Fuchs Transantarctic Expedition of 1957-58. All of them had passed by there, and we were in their footsteps!

### **The discovery**

Most significant, however, was the discovery of a hut built by Scott’s Second Western Party at Cape Geology in Granite Harbor in 1911. Bob Nichols was probably one of the few who knew it was there, and we located it.

Scott’s Second Western Party had consisted of four men: Griffith Taylor, Frank Debenham, Robert Forde, and Tryggve Gran (Scott’s Norwegian ski expert). While doing field work in Granite Harbor, they established a base at Cape Geology where they built a small hut to serve mainly as a cook shack for their

blubber stove and, perhaps, as a place to sit together and stay warm out of the wind. They expected *Terra Nova* to pick them up at the end of the summer, but the ice was slow to break up that year so the ship could not get anywhere near land. By mid-January, they realized the ship would never make it into Granite Harbor, so they hurriedly left their camp and retreated to Cape Roberts. After waiting there for a few days with no change in the situation, they continued on down the coast traveling mostly over piedmont glaciers rather than sea ice. Eventually they succeeded in reaching a point where they could get to the ship nearly two months later than originally anticipated after subsisting on seal meat for part of the time. It was a close call, but they avoided spending a terrible winter in the field. Scott’s Northern Party, on the other hand, was not so fortunate. They never did reach the *Terra Nova* that year, but miraculously survived the winter after a harrowing ordeal.

The hut we located at Cape Geology was 9 feet long by 6 feet wide and only 5’2” tall. Two or three opportunely located large boulders formed a good portion of the perimeter. The rest (except for the doorway) was a manmade stone wall. Sealskins had been stretched across the top as a roof, and pieces of sealskin had been stuffed in any chinks in the windowless walls. Inside the enclosure was what appeared to be a small scraper (presumably to scrape sealskins) fashioned from a tin can and a small sack of brown or yellow material that may well have been some kind of spice. We didn’t sample.

Outside were three metal biscuit tins and a Nansen sled 12’4” long, 21” wide and 7¼” high with wide ski runners. On the sled were two books: one of Edgar Allan Poe short stories and the other *The Secret of the Island* by Jules Verne (known to us as *The Mysterious Island*). We also saw toilet paper, a tobacco box, an empty tin of salt tablets, a canvas cloth, and five boots (strange to find an odd number!) with leather cleats on the soles. One gasoline tin

was on the sled, and two more were on the ground. An ice axe was nearby. A bamboo pole was on the sled, and another was nearby. The load had been lashed to the sled with ten leather straps.

After taking the inventory and a few photos, we left everything exactly as we found it with one exception. We took the Jules Verne book with us. Why? Frank Debenham was then still alive and was the Director of the Scott Polar Research Institute at Cambridge University. Bob Nichols wanted to visit him personally and return “something he had left behind” nearly fifty years before. He did so on our trip home. To my great regret, none of his field assistants were invited to join him.

When our field season was over, our discovery of the forgotten hut received attention in news stories all over the world. For a few months thereafter, the hut became a “tourist stop” for visitors to McMurdo. Unfortunately, I’m told that virtually every item we left behind was subsequently looted. If not destroyed by now, they are probably randomly located in various man caves all over the United States. It’s a sad postscript to an unforgettable experience.

*The New Zealand Antarctic Heritage Trust (<https://www.nzah.org>) maintains historic huts in the Ross Sea area of Antarctica and has accepted donated return of artefacts for archival preservation. – Ed.*

### **Erebus and Terror found in the Arctic**

HMS *Erebus* and HMS *Terror*, the two ships that James Clark Ross used in his famous 1840s exploration of the Antarctic, have been found in Arctic waters following a multiyear search by Canadian government agencies and the Arctic Research Foundation, a nonprofit backed by BlackBerry founder and Ontario native Jim Balsillie.

Sidescan sonar picked up images of *Erebus* in Baffin Bay in 2014. Divers found a nearly intact ship. Photography shows details including the ship’s bell, cast in 1845



*Side-scan sonar image of fabled British explorer ship HMS Erebus on the sea floor in northern Canada*



*The detached bell of HMS Erebus as found on the deck*

to honor the expedition, amazingly well preserved. Two years later, in September 2016, a return search found *Terror*, 80 miles north of the first find. *Terror* is tightly sealed and probably contains documents and other artifacts in pristine condition, according to a feature article by Gayathri Vaidyanathan in the 27 November 2016 *Washington Post*. Underwater archaeologists continue to examine the ships.

The British admiralty had sent John Franklin and the ships into the Arctic in 1845 to find a northern sea path linking the Atlantic and the Pacific oceans. The crews got within 850 miles of the North Pole before succumbing to the elements. Search parties in following seasons never found the ships or survivors, and for decades any remains were considered lost to history.

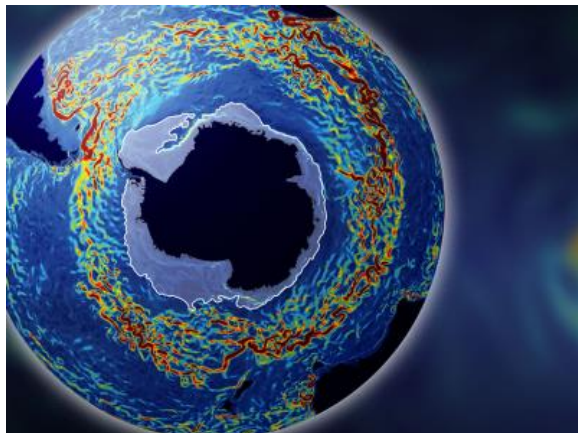


The well-publicized contemporary retreat of summer sea ice in the Arctic Ocean emboldened the modern-day search organizers. Those searches started in 2008, motivated partly by Canada's intent to demonstrate its strong link to the North.

*The Guardian* (12 September 2016) has a story and pictures.  
<https://www.theguardian.com/world/2016/sep/12/hms-terror-wreck-found-arctic-nearly-170-years-northwest-passage-attempt>

### Ocean current stronger than thought

The Antarctic Circumpolar Current, long undisputed as the planet's largest ocean current, is 30 percent more powerful than previously measured, according to 4 years of measurements by gages placed across Drake Passage.



An ocean circulation model shows the Antarctic Circumpolar Current swirling around Antarctica, with slow-moving water in blue, and warmer colors indicating faster speeds (red represents speeds above 1 mile per hour). Courtesy San Diego Supercomputer Center.

The classic estimate for the current's transport is 134 sverdrups, or million cubic meter per second. The new estimate is 173.3 sverdrups. The older "canonical" value often has been the one used as the benchmark for global circulation and climate models.

Stronger winds in the Southern

Ocean over the last few decades are unlikely to have caused the increase; satellite observations over the period have shown fairly steady transport. It's likely that improved measurement tools, not increased wind, are responsible for the new value.

The U.S. Antarctic Program research icebreaker *Nathaniel B. Palmer* deployed the Drake Passage instrument array. Emily Underwood has a short report in the 27 December 2016 *EOS*. The full paper, in the 21 November *Geophysical Research Letters*, is by K.A. Donohue (University of Rhode Island) and others.

### Ocean melting of an ice shelf – far back from the edge

Ocean melting of the bases of ice shelves has been documented at least since 2013, when a paper in *Science* by Eric Rignot and others showed that warmer currents have shifted toward the Antarctic continent and become responsible for as much as  $\frac{3}{4}$  of total mass loss on some ice shelves.

Now, in the 28 November 2016 *Geophysical Research Letters*, Seongsu Jeong (Ohio State) and others report recent rifts starting from basal crevasses in the center of the Pine Island Glacier ice shelf, causing calving farther upglacier than previously observed. Ice velocity patterns suggest that this internal rifting resulted from melting within basal crevasses, perhaps linked to ocean forcing.

Lauren Lipuma writes in the 4 January *EOS* that another clue that the center of the ice shelf is weak is that the rift opened in the bottom of a "valley" in the ice shelf where the ice had thinned, showing what researchers suspected: Ocean water can intrude far inland and remain unseen because the bottom of the West Antarctic Ice Sheet lies below sea level. Images the researchers analyzed were taken when the Sun was low in the sky, casting long shadows that highlighted the valley.

The rifting provides yet another mechanism for rapid glacial retreat. Similar valleys are even farther upglacier, suggesting the potential for accelerated ice loss.

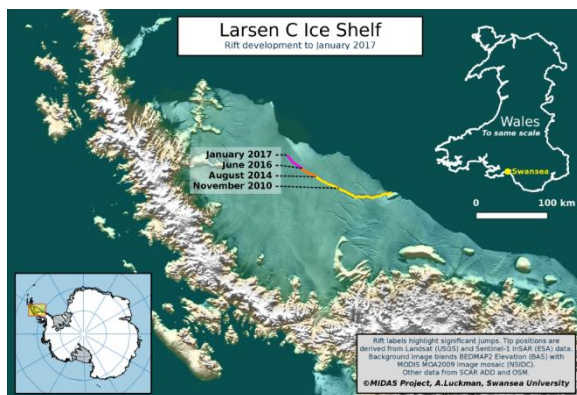
### And now, Larsen C is set to break up



And now, Larsen C . . .

By the time you read this, a chunk of the Larsen C Ice Shelf the size of Delaware may have calved. A curving crevasse first noticed in 2010 has grown upglacier and then seaward again, moving roughly south to north and reaching a hundred miles in length in early 2017. It has nearly severed the potential tabular iceberg from the parent glacier.

Larsen C is on the east side of the Antarctic Peninsula. Larsen B, to its north, famously collapsed over several weeks in 2002, demonstrating the potential for similar rapid collapse farther to the south.

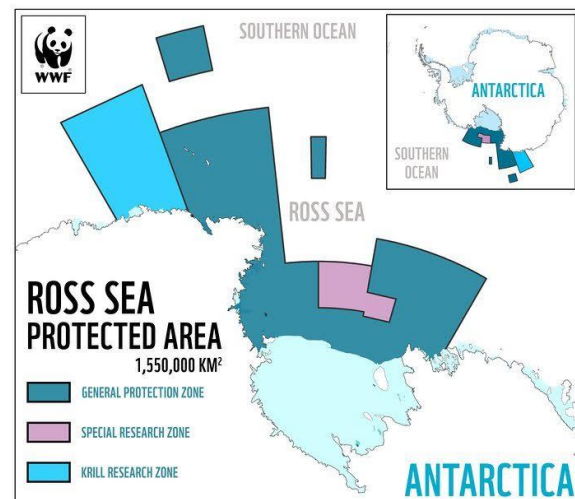


The expected calving would remove between 9 and 12 percent of Larsen C's surface area and could lead to total loss of what is by the far the largest ice shelf on the Peninsula's east coast.

Project MIDAS, UK-based, is keeping track. <http://www.projectmidas.org>

### World's largest marine reserve established in the Ross Sea

Large areas of the Ross Sea, 600 square miles in area, have been designated a marine protected area, or MPA. CCAMLR, the Commission on the Conservation of Antarctic Marine Living Resources, established the preserve after 2 weeks of meetings in October 2016. But the negotiations really stretch back 5 years, because some member countries were concerned how the MPA might affect their fishing industry.



*The Ross Sea protected area is the world's largest Marine Protected Area. It bans fishing, but allows research fishing in 28% of the total area of 600,000 square miles or 1.5 million sq km. The rules enter into force 1 December 2017 and will extend at least 35 years.*

Fishing is barred in the reserve, with exceptions for research. The concept is to safeguard the area against pollution and overfishing, which will protect species

ranging from krill to whales.

All 25 members of CCAMLR had to agree. Membership comprises 24 nations and the European Union. The agreement comes up for renewal after 35 years.

The Ross Sea has a diverse ecosystem, considered one of the planet's most pristine

. It also has been an area of fishing – especially for Patagonian toothfish (a.k.a. Chilean sea bass), a valuable species that straddles the northern border of the CCAMLR area.

Designating the area as a preserve will enable researchers to focus on such factors as the response of the area to climate change, providing insights for application in others marine areas.

Secretary of State John F. Kerry was closely involved in negotiations particularly with Russia, which had been reluctant to sign on.



*Secretary of State John Kerry near McMurdo Station. He also visited South Pole Station and New Zealand's Scott Base.*

He said the agreement represents “further proof that the world is finally beginning to understand the urgency of the threats facing our planet.” The new agreement “happened thanks to many years of persistent scientific and policy review, intense negotiations, and principled diplomacy. It happened because our nations understood the responsibility we share to

protect this unique place for future generations.”

In a separate event, the Secretary of State visited McMurdo and South Pole stations in November 2016. He is the highest ranking U.S. official ever to have visited Antarctica and U.S. Antarctic Program facilities there.

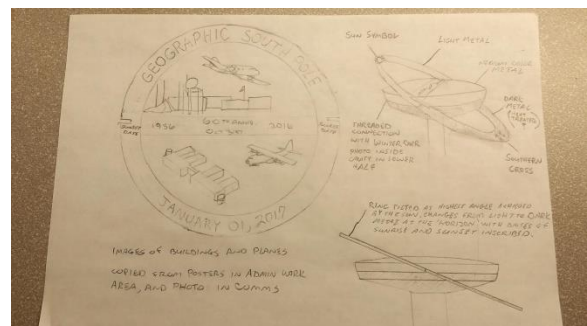
## **Amundsen-Scott South Pole at 60**

The U.S. station at the geographic South Pole turns 60 years old in 2017.

Continuous human occupation of the site since shortly after Gus Shinn landed an R4D on 31 October 1956 has had one major station build and two rebuilds: the original facilities established in 1956-57, the geodesic dome station dedicated in 1975, and the current above-grade station dedicated in 2008.



*The 2017 custom-made marker at 90°S*



*Sketch of marker by designer*

Used always as a research site, the station's facilities have evolved from natural



sciences observing Antarctic characteristics to include major facilities for astrophysics, seismic observations, and other studies.

Society member Jerry Marty has provided a photograph (see the online edition of the newsletter) of the commemorative marker placed 1 January 2017 at the exact location of 90°S latitude.

### Attention Palmer Station alumni(ae)



*Polly Penhale at Palmer Station, January 2017. Ice-strengthened research ship Laurence M. Gould is at the pier.*

From Palmer Station: Polly Penhale, NSF Polar Programs' Environmental Officer, sends greetings from the sunny South. Summer is in full force, with science focusing on the marine ecosystem, penguins, humpback whales, terrestrial insects, and atmospheric chemistry.

This year marks the 27<sup>th</sup> anniversary of the Palmer Long Term Ecological Research (LTER) program, which examines variability in sea ice dynamics, primary production, zooplankton ecology, predator distributions, and microbial and biogeochemical processes in the Antarctic marine ecosystem. The LTER also is identifying the mechanisms of ecosystem response to rapid climate change. LTER scientists work from station, as well as on the research vessel *Laurence M. Gould* during a January cruise which conducts

studies from Palmer Station south to the U.K. Rothera Station.

**Request for 1968 photo.** The stairwell in the GWR Building displays photographs of wintering personnel from 1965 through 2015. However, a photo of the 1968 winterers is *missing*. If you have a photo of personnel from that year, please contact Polly, [ppenhale@nsf.gov](mailto:ppenhale@nsf.gov) or 703-292-7420. Arrangements will be made to copy the photo so it can be framed and displayed at Palmer.

### We have a new website!

by Tom Henderson, Webmaster



The Antarctic Society launched its new website during Thanksgiving week of 2016. We hope you like it!

There are reasons for this move. The original website was developed nine years ago by an amateur (me!) using custom coding written in a proprietary coding language called Cold Fusion. Cold Fusion was what I was familiar with from my work life. The site coding was not up to professional standards and was difficult to maintain. When Cold Fusion was upgraded, I had to comb through the site, identify problems, and correct them. Cold Fusion is proprietary, so we have been paying an extra charge to support the language. Now we no longer have to worry about upgrades or coding changes; our host takes care of that.

Our hosting cost before the migration to the new website was \$31.95 per month. The monthly cost on our new host,



Squarespace, is \$18. We pay \$5 per month for a secure login application (Sentry Login) and \$5 per month for an email host (Google GSuite), so the overall cost has been reduced slightly.

We were about to exhaust the available space on our old site (3 GB, which included email and the website) and would pay a minimum of \$8 per month more for additional space. Now we have 30 GB of space for email alone and unlimited space for the website itself! We also no longer pay \$100 per year to a separate host for our video and audio files.

Security was becoming a concern on the old site in that we were getting an increasing number of phishing spam messages. Since we switched to the new site, we have had no such spam. Finally, having the website on Squarespace means that if another webmaster were to take over the site, the learning curve would be less because there is little custom coding in the new site, and that is in simple HTML. I have a detailed manual for maintaining the website.

### **Same great content**

The content on the new website is the same as on the old one. The contractor, Troy Web Consultants, recreated all of the web pages and moved all of the content, including the data for Society members and the archive of over 3,500 emails. The total cost was \$5,500, several hundred dollars less than the original estimate.

The new website is not database-driven. As a result, members will no longer be able to update their personal information directly. You will have to notify the webmaster of the required changes, who will make the update manually.

The Sentry Login security system requires that all usernames be in email format. Members who have an email address of record with the Society must now use that email address to login. Members without an

email address of record have been assigned a username comprised of the member's last name followed by "@antarctican.org." Passwords remain the same as those on record for the old website. As before, you can change your password and the prefix of your username any time by contacting the webmaster. If you are unsure about what to use, please contact me so we can clarify your login credentials and make any needed changes. If you see a message saying "Your account is not active" it means that our records show that your membership has expired and a payment of dues needs to be made. Here is my contact information:

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These changes will take adjustment but were necessary. I hope you find the new website at least as easy to use as the old one.

As always, I welcome comments on the website.

### **Climate scientist Gordon Hamilton dies near McMurdo**

University of Maine glaciologist Gordon Hamilton, 50, died 22 October 2016 when his snowmobile fell into a crevasse near White Island, 20 miles south of McMurdo Station. He and colleagues were making an early-season inspection of a prepared track on which heavy vehicles transport supplies. The area, known as the Shear Zone, is where the Ross Ice Shelf meets the McMurdo Ice Shelf. It is intensely crevassed, and the ice approaches 650 feet in thickness.

In a prepared statement the university's president, Susan J. Hunter, said "Gordon's glaciology research around the world – from Antarctica to Greenland – was second to none. He leaves a legacy as an outstanding scientist and a caring mentor

and well-known teacher to undergraduate and graduate students.”

Dr. Hamilton was born in Scotland, graduated from the University of Aberdeen, and received the doctorate from the University of Cambridge, U.K. After working at the Byrd Polar Research Center, Ohio State, and the Norwegian Polar Institute, he joined the University of Maine’s Climate Change Institute in 2000.



*Dr. Gordon Hamilton in Antarctica. Courtesy University of Maine*

He studied the behavior of ice sheets and their role in the climate system and modulating sea level, focusing recently on the role of the ocean in ice shelf stability.

Kelly Falkner, who heads NSF’s polar office, wrote that researchers in Antarctica are “at the frontiers of human knowledge, but also at the physical frontiers of human experience” and that Hamilton’s death “is a tragic reminder of the risks we all face – no matter how hard we work at mitigating those risks.”

Justin Gillis, *New York Times*, who had accompanied Gordon on some of his fieldwork, wrote that field scientists are rational people, not thrill-seekers. Even out on the ice they spend a lot of time thinking in equations, and they tend to be safety-minded and careful. “The real thrill for them is figuring out something hard.”

“We’re always playing catch-up,” Gordon told Gillis about his research. “The ice sheet does something we never predicted. And then we see it.”

## **Erich Bloch, NSF Director 1984-1990**

Erich Bloch, who led IBM’s development of the System/360, called the most successful computer system of all time, and later, from 1984 to 1990, was director of the National Science Foundation, died at the age of 91 on 25 November 2016 at his home in Washington, D.C.



*Erich Bloch at IBM shows a component of System/360. Courtesy Washington Post.*

Mr. Bloch was the first NSF director to come from a business rather than an academic background. He was credited, writes Emily Langer in a 28 November *Washington Post* obituary, with transforming the agency from a benefactor mainly of pure research into an engine of practical advancement.

Some said the approach may have saved NSF from the axe during Federal belt-tightening. Mr. Bloch even persuaded Administration officials to increase its budget.

Your editor, then working in the Foundation's polar office, recalls Mr. Bloch telling us, "Twice as many of you work here as are needed. I'm going to either double the budget or fire half of you." We kept our jobs.

Mr. Bloch was born in Sulzburg, Germany, on 9 January 1925. His father and mother were deported by the Nazis and perished in the concentration camps.

"I have been pretty much on my own my whole life," he told the *New York Times* in 1987. "It wasn't easy getting started. It took a certain amount of drive and aggressiveness. I learned very early I had to do things myself for something to get done."



*Erich Bloch (right), then at IBM, discusses computer development with a colleague. Courtesy Washington Post.*

That frame of mind got translated into practical advice for Society member David Bresnahan, then NSF Representative, Antarctica, at McMurdo. Mr. Bloch was there on an inspection visit and gathered the handful of NSF employees for a question-and-answer session. Dave told the director that he was obliged to make decisions quickly and irreversibly regarding scientists at the station, decisions that affected their field research and possibly their careers. "How much authority do I have for these decisions?" Dave asked. Mr. Bloch replied, "You have whatever authority it takes. I will back you up."

Shortly after Mr. Bloch began at NSF, our Society's current honorary president, Robert H. Rutford, who headed NSF's polar office at the time, was making a presentation to the National Science Board, the Foundation's governing body. Your editor was seated near Mr. Bloch, who seemed focused more on paperwork than what Bob was saying. Suddenly he shifted his full attention to Bob. After listening for a minute or two, he whispered in admiration to a subordinate, "Where'd we get this guy?" The polar office seemed to do well during Mr. Bloch's tenure at NSF.

An interviewer asked if, looking back, he would have done anything differently.

"No. I did what I thought at that time was important. Revisiting that now and coming to a different conclusion is not helpful to anyone, especially oneself. You live a life only once. You don't live it twice. You do what you think is right at the time, and you stand on that."

### **Lou Lanzerotti receives AGU award**



*Dr. Louis Lanzerotti. Courtesy EOS*

The Society's Board of Directors member Louis J. Lanzerotti was awarded the 2016 William Kaula Award at the American

Geophysical Union Fall Meeting Honors Ceremony, held on 14 December 2016 in San Francisco. The award honors an individual for extraordinary dedication to, and exceptional efforts on behalf of, the Union's publications program.

Lou, whose earlier work in the Antarctic focused on processes in the upper atmosphere, established the AGU journal *Space Weather* to promote communication among scientists, engineers, technicians, science administrators, and policy makers to help mitigate space environment hazards to technical systems. The success of this journal set the stage for the National Space Weather Strategy and Action Plan, rolled out by the President's Office of Science and Technology Policy in October 2015.

Lou spent much of his career at Bell Labs, which focused on basic as well as more applied research. He currently is at the New Jersey Institute of Technology in Newark.

### Julie Palais retires after 38 polar years



*Dr. Julie Palais at South Pole Station*

After 38 years of involvement with the United States Antarctic Program (formerly United States Antarctic Research Program), 28 trips to the ice (23 of them as program director for NSF's Antarctic glaciology program), 3 trips to Greenland when she also handled the Arctic glaciology program, and 26½ years at the National

Science Foundation, at the end of 2016 Julie Palais hung up her mukluks.

Julie's own research focus was on volcanic ash in ice cores. She says she's had one of the best careers anyone could have asked for, seeing parts of the world few get to see and having a fantastic group of scientists and students working on research funded by her program. These folks contributed discoveries with great impacts and societal relevance during an explosive period of advances in glaciological methods. She observes that things have changed a lot since she started as a graduate student at The Ohio State University in 1978.

Julie plans to follow her passion with the newly emerging field of animal welfare science, starting with completion of a postgraduate certificate in international animal welfare, ethics, and law.

### Seabird rescues continue on cruise ship

by Cory Laughlin

Once again a petrel was fussing about in our stateroom closet, asking to be fed. Here we go again. Off to see the chef to order fresh scallops and shrimp.



*White wing bars are one of the identifiers for Magellanic diving petrels. There are three other species of diving petrels – common, Peruvian, and South Georgian.*

Last year the Expedition Team, for Holland America Line Antarctic trips aboard *Zaandam*, rescued several pelagic seabirds that landed on the ship. This season was no



different, with 20 birds trapped on board, needing care and release back to the sea. One bird, a Magellanic Diving Petrel, was discovered hiding under a stairwell while cruising in Antarctica, far from its breeding grounds in the Strait of Magellan. So, like our stowaway last season, we were obligated to house and feed our visitor until giving him back to the ocean near the correct latitude for his species.



*Diving petrels have tubular nostrils that aid in eliminating salt, allowing them to only drink sea water.*

Why do these strandings happen? In the southern oceans pelagic petrels and shearwaters travel to and from their breeding islands at night. Sometimes, disorientated by the bright lights, they land on ships. In other instances the diminutive pelagic birds are blown onto the decks during storms. Their legs are not designed to walk on hard surfaces, which traps them until caring humans lift them over the rails.

I am trained in aviculture (the care of wild birds in captivity), and it is my second nature to rehabilitate sea birds. I realize it is crucial to ensure the stowaway is well fed and dry before release. Stress and rubbing up against ship stairs and walls can disrupt waterproofing and expose the skin, which can lead to hypothermia. Time in a dark, warm space allows the bird to calm down and preen its feathers, and dry out. Of course, our stateroom closet is perfect!

Releases take place in early morning in the appropriate breeding range. If predators are in the area the release is delayed. Giant petrels and skuas are only too happy to swoop in to kill and eat a newly returned petrel.

Preventive measures are taken by many ship crews who are conservation-minded and believe in the “do no harm” rule when travelling in wild places. On *Zaan-dam*, lights are dimmed as much as possible at night to reduce seabird strandings. Signs are posted throughout the ship advising passengers to contact onboard naturalists when they find a bird on the deck.

On 29 December 2016 we picked up 15 common diving petrels from the top deck and released them after a 4-hour respite in boxes so they could preen and dry off.

Our Magellanic diving petrel roommate for five days was successfully returned to the wild, full of fresh seafood. He had at least 200 miles to fly to his home island, but the stamina of these birds is unparalleled, and our hopes were high.

God Speed little one.

Holland America Line Antarctic Expedition Team: Dave Bresnahan, Guy Guthridge, Scott Drieschman, Cory Laughlin

*This story updates “Stowaway in Antarctica” in the April 2016 newsletter.*

## Phoenix snow runway opens

A new runway near McMurdo that’s one of its kind in the world has been approved for use by U.S. Air Force C-17 planes and other heavy aircraft.

The runway was built by carefully and repeatedly compacting the snow surface on the McMurdo Ice Shelf at a location where snow adds about 1½ feet a year: not too much to deal with, but enough to whiten dark particulates (dust) that would absorb the Sun’s heat and compromise the surface.



*Phoenix snow runway*

It's 3 miles from an older compacted snow runway called Pegasus, which has been in use for 26 years. Over that time movement of the ice shelf has taken Pegasus  $\frac{2}{3}$  of a mile from where it started; strong melting there now can ruin the surface.