



NOAA Scientist Honored at White House



Christy Bowe/Image Catcher News 2000 for NSF

President Clinton presents Susan Solomon with the Medal of Science March 14. Solomon recalled the President seemed to enjoy himself during the ceremony and gave his speech with great gusto. "While we were up there and my citation was being read, I said, 'It certainly looks like you enjoy this job.' He laughed and said, 'Yes, I do.'"

Susan Solomon Receives Medal of Science

—By Dane Konop

Susan Solomon, an atmospheric chemist at NOAA's Aeronomy Laboratory in Boulder, Colo., received the Medal of Science in Washington, D.C., March 14.

Solomon is the first NOAA scientist to receive the medal, the nation's top science award.

She was cited for "key insights into explaining the cause of the Antarctic ozone hole."

President Clinton presented the medal to Solomon during a ceremony in the historic White House green room that also honored 11 other U.S. scientists, including three Nobel laureates.

A history fan, Solomon said she very much enjoyed her White House experience.

"It was great fun to have the chance to go through some of the rooms where remarkable things are kept. I particularly enjoyed seeing the very early paintings of Native Americans, which didn't have a label on them but probably were given to the then-President in the early days of our nation," Solomon said. "I was happy when President Clinton happened to mention that it is the room where Lewis and Clark spread out the maps for
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Urban Tornadoes Are Worst-Case Storm Scenario

—By John Leslie

The pair of deadly tornadoes that hammered downtown Ft. Worth and Arlington, Texas, during the evening rush hour March 28 killed five people and caused an estimated \$300 million in damages.

"This was a worst-case scenario, a downtown area being hit by a powerful tornado around rush hour," said X. William Proenza, director of the National Weather Service's Southern Region headquarters.

Speaking at a news conference outside the headquarters building in downtown Ft. Worth, Proenza, flanked by Skip Ely, meteorologist-
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Kenneth Graham/NOAA

A tornado blew through downtown Fort Worth, Texas, March 28, knocking out windows and killing five people.

NOAA, Interior to Lead Protection of U.S. Coral Reefs

—By Nancy O'Donnell

With over 10 percent of U.S. coral reefs already decimated by human uses, the U.S. Coral Reef Task Force took an important stand for the future of our nation's threatened coral reefs in a groundbreaking national action plan announced in Washington, D.C., March 2.

"Protecting 20 percent of all U.S. reefs and other decisive actions called for in the new plan are crucial because two-thirds of the world's reefs may be dying. If current conditions continue, an alarming 70 percent of the world's reefs may be gone by 2050. This rapid decline represents a serious threat to businesses, consumers, communities and the environment," said NOAA Administrator D. James Baker, task force co-chair.

The new proposal includes a commitment by the Clinton administration to establish marine reserves by 2010 in one-fifth (1,300 square miles) of the nation's coral reefs, or an area about the size of Rhode Island.

The areas being considered include reefs off Florida, Hawaii, Puerto Rico, the Virgin Islands and the Pacific trust territories.

The U.S. Coral Reef Task Force was established by President Clinton in June 1998 to lead the U.S. response to the growing global environmental crisis in the world's oceans.

Restoration and preservation efforts will involve 11 agencies and be headed by NOAA and the Department of the Interior. These two lead agencies will coordinate with state officials and territorial agencies to implement the plan,



Adrian Reed/DOC

NOAA Administrator D. James Baker announces protection for U.S. coral reefs.

which calls for developing a scientific consensus on what reefs should be set aside as ecological reserves.

Fishing and other activities harmful to healthy reefs would be banned in these areas.

The national plan also substantially increases funding for coral reef research and preservation. The current level of spending—\$11 million—would more than double to \$25 million. Most of the funding would be used for monitoring and mapping endangered reefs.

Today just five percent of U.S. coral reefs have been adequately mapped. The funding will help to build an integrated national reef monitoring system that will profile and track the health of U.S. reefs.

NOAA's Florida Keys National Marine Sanctuary took the lead in protecting coral reefs when it established an original network of "no-take" marine reserves in July 1997.

"The various management tools proposed in the action plan, including the use of ecological reserves or no-take areas, is another very positive action. It's extremely gratifying to have the support of our national leaders to set aside critical areas of coral reefs for future generations," said Florida Keys Marine Sanctuary superintendent Billy Causey. ☺

Warren Taguchi: Quiet Competence

This is the fourth in a series of profiles of men and women who have been NOAA employees since NOAA was established in 1970.

—By Brian Gorman

NOAA's Pacific Marine Center, the office that manages the agency's seven West Coast ocean-going research ships, is located along the shore of Seattle's Lake Union, nestled among high-end condos across the street and some funky sailboats on the lake itself.

Warren Taguchi is the center's deputy director, and he's as quiet and unassuming as the building he works in.

Taguchi, a captain in the NOAA Corps, has been the center's deputy since 1992.

In spite of a dreary shower outside and temperatures in the forties, typical for Seattle in early spring, he's wearing his summer khakis—short sleeves, open collar—suggesting an air of relaxation and friendliness that is one of his hallmarks. And he looks good in the uniform.

Although Taguchi will be 56 in

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30th Earth Day Celebrated April 22

The thirtieth annual Earth Day will be celebrated around the country April 22.

NOAA Earth Day activities will include an exhibit on The Mall in Washington, D.C., a ribbon cutting, open houses and tours at NOAA's renovated Galveston, Texas, Laboratory, and public events at most of NOAA's national marine sanctuaries across the country. For a complete listing of Earth Day activities nationwide, see www.Earthday.org. ☺

Tornadoes

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in-charge at the Ft. Worth Forecast Office, said, "Providing a tornado warning 10 minutes in advance helped, but we are very fortunate that there were not more fatalities."

Preliminary reports from a survey team determined the strength of the Ft. Worth tornado at F-2, and the Arlington tornado at F-3. The Arlington tornado was the first F-3 in Tarrant County since 1960.

Earlier on March 28, forecasters began watching atmospheric conditions that could spawn severe weather. At 6 a.m., the Ft. Worth Forecast Office issued a hazardous weather outlook. By 2:53 p.m., the office issued a tornado watch and at 6:10 p.m., a tornado warning. Then 10 minutes later, the Ft. Worth tornado struck.

Ely said, "This was a classic spring severe weather pattern. It looked like it was all going to come together in the late afternoon, the time of maximum heating."

The tornadoes are the deadliest and costliest ever to hit Tarrant County, said Garry Woodall, the warning coordination meteorologist for the Southern Region. Woodall, a former tornado chaser who has seen plenty of twisters in the open field, came within a half mile of the Ft. Worth tornado. The experience left him shaken.

"It's one thing to see tornadoes in the open country, but it's a different story when they are in an urban setting," he said. "I saw the green flashes from the power lines being snapped. It's something I won't soon forget."

Proenza praised the work of the Ft. Worth Forecast Office and the lead time it delivered. "Though we always hate to see any loss of life, the office did a great job staying on top of this dangerous storm," he said. ☺

Mountain Research Project to Improve Winter Weather Forecasts in West

—By Keli Tarp

For people living in and traveling through the mountain regions in the western United States, winter weather can be unpredictable. NOAA scientists recently completed a month-long research project to learn more about snow and rain in mountain areas that ultimately should improve winter weather forecasts.

In the Intermountain Precipitation Experiment, 30 scientists from several NOAA offices and the universities of Utah, Nevada and Oklahoma gathered data between Jan. 31 and Feb. 25 on seven storms in the Wasatch Mountains in northern Utah and in the Teton Mountains in Idaho. Operations were based out of the National Weather Service Forecast Office in Salt Lake City.

Co-lead scientist for the project, David Schultz, a research meteorologist at the National Severe Storms Laboratory in Norman, Okla., called IPEX a tremendous success.

We had the opportunity to examine storms in greater detail," Schultz said. "On more than one instance, we were very surprised by what we saw with our observing tools. As we begin to analyze this data, we hope to increase our understanding of precipitation processes in complex terrain to make better predictions in the future."

The scientific and socio-economic benefits of IPEX will be far-reaching.

During the past nine years, the fastest growing states have been Nevada, Arizona, Idaho and Utah," said Vickie Nadolski, NWS Western Region director. This puts more people at risk for winter weather disasters because more people are living and vacationing in the West. IPEX provided an excellent opportunity for NOAA researchers, NWS forecasters and university officials to collaborate and share their expertise, as well as *continued on page 6*



David P. Jorgensen/NOAA

Two mobile laboratories from NOAA's National Severe Storms Laboratory join the NOAA P-3 research aircraft for the start of IPEX at Salt Lake City International Airport.

Focus On...

Susan Solomon's Medal of Science

—By Jana Goldman

Luckily, Susan Solomon was carrying her National Medal of Science with her the night after she received it from President Clinton. It was all the identification she needed to gain admittance to a reception in her honor at the National Museum of American History in Washington, D.C., March 15.

"I neglected to bring the invitation. So I showed the medal to the guard and she then seemed convinced that I must be the genuine guest of honor," Solomon said with a laugh as she entered the NOAA-sponsored reception.

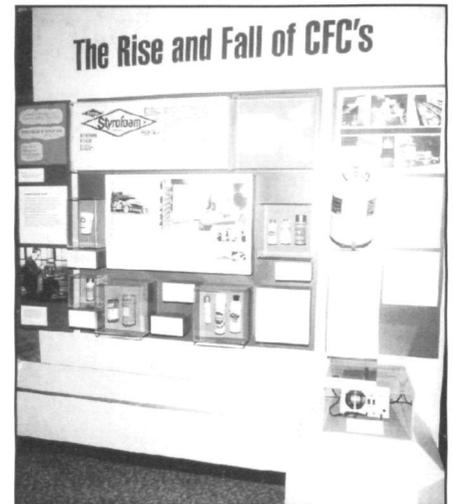
The reception capped a busy few days for the atmospheric scientist who first discovered the relationship between chemical reactions of manmade chlorine and the depletion of the Earth's protective ozone layer above the Antarctic. It was for

this work that she became the first NOAA scientist to receive the honor in the medal's 40-year history.

Solomon was one of 12 laureates honored with the medal, which is considered the American equivalent of the Nobel Prize. The medal was established by Congress in 1959 and is administered by the National Science Foundation.

At an earlier event, National Science Foundation Director Rita Colwell said of Solomon, "Her work changed the world."

Beginning with a black tie dinner, followed by a National Science Foundation breakfast and press roundtable, then going on to the White House to receive the



Adrian Reed/DOC
CFC exhibit at the Natural History Museum.

award from the President, and ending with congratulations from NOAA, Solomon sailed through the events accompanied by her husband, Barry Sidwell, her stepson, Colin, and family friend Maria Neary.

Commerce Secretary William Daley smiled broadly as Solomon approached the President to receive her medal. NOAA Administrator D. James Baker said "Everyone at NOAA is extremely proud of Susan."



Adrian Reed/DOC

Assistant Secretary Scott Gudes and Susan Solomon.



Adrian Reed/DOC

Susan Solomon and fellow Antarctic researcher David Hofmann stand in front of replicas of themselves in an exhibit depicting McMurdo Station in the Antarctic.



Adrian Reed/DOC

Susan Solomon addresses guests at the National Museum of Natural History in Washington, D.C., honoring her Medal of Science.

The reception, organized by the Office of Oceanic and Atmospheric Research and NOAA Public Affairs, was given in cooperation with the museum, the American Meteorological Society and the University Corporation for Atmospheric Research.

While munching on appetizers and “ozone hole” cookies—sugar cookies with the centers cut out and dusted with powered sugar—guests congratulated Solomon, visited the exhibits and listened to remarks by Baker, museum deputy

director Martha Morris and Al Kellie, Director of the National Corporation for Atmospheric Research.

“The best celebrations happen with family,” Solomon said. “This was a very special evening.” ☺



Adrian Reed/DOC

Bill Nye, “The Science Guy,” and Solomon family friend Maria Neary.



Adrian Reed/DOC

Barry Sidwell, Solomon’s husband, Emily Baker, Administrator D. James Baker’s wife, and Susan Solomon.



Keli Tarp/NOAA

Dennis McCarthy (right), meteorologist-in-charge of the National Weather Service Forecast Office in Norman, Okla., demonstrates how to program a NOAA Weather Radio at Norman's Sooner Mall March 25.

Weather Service Staff Helps Program NOAA Weather Radios in Oklahoma

—By Keli Tarp

Staff from the National Weather Service Forecast Office in Norman, Okla., helped NOAA Weather Radio owners program their units on Saturday, March 25, at Sooner Mall in Norman.

Oklahoma City area residents have purchased nearly 8,000 life-saving NOAA Weather Radios through a special program that began five weeks ago. Operation Warn is an initiative to make available 100,000 specially-priced NOAA Weather Radios to area residents by the end of 2002, coordinated by Oklahoma City Emergency Management, Oklahoma Department of Civil Emergency Management and NOAA's National Weather Service.

"A NOAA Weather Radio with an alarm and battery back-up is one of the best ways to protect your family from tornadoes, especially at night when it can wake you up and alert you to turn to commercial radio and television for more information," said Dennis

McCarthy, meteorologist-in-charge of the National Weather Service Norman Forecast Office.

When severe weather watches and warnings are issued, an alarm will sound and the radio will turn itself on to broadcast the information. With new digital technology called "specific area message encoding," the alarm on a NOAA Weather Radio can be limited to counties in the immediate area. During the event, NOAA staff provided the special codes needed to do this and instructions for programming the radio.

According to the National Weather Service, 85 to 95 percent of Americans can receive NOAA Weather Radio broadcasts; however, only five to 10 percent actually own a NOAA Weather Radio.

"We encourage everyone to equip their homes, schools, businesses and public places with this life-saving device. We want to make NOAA Weather Radios as common as smoke detectors," McCarthy said. ☺

IPEX

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learn more about the highly volatile weather systems in this area."

While forecasters can predict winter weather on a large scale, the finer scale differences in precipitation between different elevations can be challenging, according to Larry Dunn, science operations officer for the NWS Salt Lake City Forecast Office. "We had many storms during IPEX that shared similar characteristics, and yet our skill in making short term predictions varied considerably from event to event. Clearly there are processes operating on small scales that we don't yet understand," Dunn said. "Analysis of the IPEX data set should help us with precisely these issues," he said.

A variety of sophisticated atmospheric observing platforms were used during the experiment. The NOAA P-3 research aircraft, equipped with meteorological instrumentation and radars, flew into the storms. From the air, the radars were able to see details of winter storms over the mountains, providing new clues to the complex interactions of the atmosphere and the high terrain.

On the ground, scientists released 100 instrumented weather balloons from two NSSL mobile laboratories, providing unprecedented measurements of electrification and lightning in winter storms.

An additional 205 weather balloons were released three to eight times a day at NOAA sites at Boise, Idaho, Grand Junction, Colo., Salt Lake City, Utah, and Reno, Elko and Desert Rock, Nev. These measurements enhanced an existing surface observing system known as the Mesowest Cooperative Networks coordinated by the University of Utah. ☺

Taguchi

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May and his full head of hair is streaked with gray, you get the feeling that he could have worn the same uniform—and the same size pants—when he joined the Corps in 1969, at the age of 25.

Taguchi grew up on Maui, Hawaii, when it was still a territory and its shores still uncluttered by beach umbrellas and \$230-a-night hotels. Like any kid on the island, he was drawn to the water, first as a source of wonder and later, at Oregon State University and at graduate school at the University of Hawaii, as a mirror of his academic interest in marine zoology.

It was at the University of Hawaii that a friend introduced him to the Corps, even before there was a NOAA. In those days, the Corps was part of the U.S. Coast and Geodetic Survey and it was mostly a surveying operation, both on land and sea.

"My interests and my training were in oceanography and marine science," recalls Taguchi. "And back then the Corps was mostly 'hard science,' engineers and physicists."

The lure of the sea is tough to ignore, however, and in 1969, Taguchi found himself shipping out of Seattle as a deck officer aboard the NOAA Ship *Davidson*, the 175-foot sister to the NOAA Ship *MacArthur*, steaming up the Inside Passage to southeast Alaska

and doing what's called "visual inshore hydrography," essentially mapping the shoreline and the nearshore bottom. Lots of water, but not much biology.

Things got even less biological in the next few years, when Taguchi was assigned to a mobile geodetic field party in the western U.S. doing more surveying, on land this

tion over marine life out to 200 miles offshore. And, not to put too fine a point on it, that's a lot of marine life.

"Around this time (1973), the Fisheries Service wanted people to work in La Jolla doing tuna/porpoise research, setting up aerial surveys to determine the porpoise population," in the eastern tropical

Pacific Ocean, Taguchi remembers. "With (200-mile) extended jurisdiction, there was lots of need for Corps officers to get involved in new programs," he recalls.

But that was a shoreside job, at the Fishery Service's Southeast Laboratory in California. It wasn't until 1975, and for the next two years, that Taguchi finally got to combine in any practical way the two words on his academic degree: "marine" and "zoology," doing research at sea.

The NOAA Ship *Miller Freeman*, at the time the biggest fishery research stern trawler in the U.S., was being reactivated to do work—mostly bottom-trawling assessments—in the Bering Sea in anticipation of oil exploration. He was the ship's executive officer.

After a shoreside stint back in Seattle in the late '70s to get a master's degree in marine affairs at the University of Washington, in 1980 Taguchi was picked as the first commanding officer for the brand new NOAA Ship *Chapman*, a 127-foot stern trawler built specifically to survey Alaska's crab and groundfish resources.

His sea tour completed, Taguchi *continued on page 8*



Capt. Warren Taguchi on the NOAA Ship John N. Cobb.

Larry Mordock/NOAA

time, with no marine organisms in sight.

But that was soon to change, in large part because NOAA had just been created, folding into it not only the Corps but the old Bureau of Commercial Fisheries, renamed the National Marine Fisheries Service. The new Fisheries Service had a huge responsibility under a new federal law giving it jurisdic-

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discussions before going west on their epic journey. I was struck by the fact that just as Lewis and Clark were the explorers of their era, those receiving the medals are a different kind of modern explorer," she said.

She also had a chance to mingle and chat with the other award recipients.

"We spent a good deal of time together at the various events. Each was a pleasure to meet and talk with, and an honor and humbling to be among them," Solomon said.

The evening after the White House award ceremony, Solomon was honored at a reception at the National Museum of Natural History in Washington, D.C., which has an ozone hole exhibit that includes a replica of the McMurdo research station in the Antarctic, replete with mannequins representing Solomon and David Hofmann, director of NOAA's Climate Monitoring and Diagnostics Laboratory.

"I could certainly never have imagined as I walked around McMurdo with Dave and others almost 14 years ago now that I'd end up at the White House getting the Medal of Science for that work," Solomon said. "I'm really glad that when I was down there doing the work, all I thought about was how much fun it was. I was only 30 and had no idea at all that this would take me to the high-stakes world of science recognition. I'm glad I didn't back then, and I still strive hard now to focus on what matters—the joy of doing the work, which remains very intense for me.

"I'm very fortunate to be in a place like NOAA, where I'm able to do this with the support of colleagues and management," she said.

Taguchi

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next went to Washington, D.C., from 1983 to 1986 to work at the Fisheries Service headquarters, then back to sea from 1986 to 1989 as the commanding officer of the NOAA Ship *Miller Freeman* out of Seattle.

In 1989, Taguchi was promoted to captain and began a series of important deputy directorships in Seattle, first at the Northwest Fisheries Science Center, then the Office of NOAA Corps Operations for the Atlantic and Pacific Marine Centers and finally his current job as deputy of NOAA Corps Operations at the Pacific Marine Center.

All the while, of course, research techniques and technology were changing.

"You see a lot more electronics, of course," notes Taguchi. "When I started out, hydrography was pretty simple—single beam—and so were the fathometers, displaying a black-and-white trace paper that required a lot of interpretation to determine if the little marks on it were fish or not. Nowadays, with color fathometers and fish finders, it's a lot easier."

"If I had to compete to enter the Corps now," Taguchi says with typical modesty, "I couldn't get in."

One thing hasn't changed, though, and Taguchi's glad about that.

The Corps' ideals have stayed the same," Taguchi says. "We use much better tools, but we still have a sense of community, of family; in the Corps that hasn't changed." He smiles and adds, "Well, maybe we

had a little bit more fun before."

It's camaraderie that seems to be Taguchi's watchword wherever he goes. Most of the changes he's initiated over the past 10 years or so have been in opening lines of communication or improving morale.

"That's what I do," he says. "The Corps is a nice mix of people, men and women, in a friendly atmosphere." He adds, "The Corps spends a lot of time talking to different users in NOAA. We get to know what the needs and problems of the labs are, for example. And they become our partners. It's not 'you and me,' it's 'us.'"

Taguchi will be retiring again soon. This time for real. He retired officially last July after 30 years in the Corps, but was back at work, in the same job, the next day.

Not surprisingly, there's a lure stronger than the Corps in his life, however. Taguchi and his wife Eileen own some property in Maui that's calling to them. He's lived in Seattle for 23 of those 30 years and, he says, "I've got a lot of sunshine to catch up on."

His kids, a boy and girl, are grown now and are building a home 4,000 feet up a mountain in Hawaii. No ships in sight; it looks pretty attractive he says.

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Coming May 24—

25th annual NOAA Fish Fry, H.C. Hoover Building, Washington, D.C.

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