

Roger Smith Named Geophysical Institute Director

University of Alaska Fairbanks Provost Paul Reichardt appointed Physics Professor Roger Smith as the new director of the Geophysical Institute on April 21, 2000. Smith had served as interim director since July 1, 1999, following the departure of former director Syun Akasofu, who left to head the International Arctic Research Center (IARC).

"I didn't come here expecting to be the director," said Smith, but the path he took to this point originated with inspiration from the Geophysical Institute.

The 1957-58 International Geophysical Year was organized in part by the space physics group at the Geophysical Institute. All-sky cameras worldwide photographed the aurora, and pushed it into the public consciousness. At the time, Smith was a high school student in England deciding what to pursue in college. The research and reputations of Syun Akasofu, Sydney Chapman, and Eugene Wescott inspired Smith to choose physics and later to apply for a job at the institute.

Smith earned his B.S. ('63) and his Ph.D. ('67) in physics from the University of Exeter in England. As a graduate student, he studied upper atmospheric winds and temperatures.

After earning his doctorate, Smith worked at Ulster Polytechnic (now Ulster University) in Ireland. His position required teaching five classes and four graduate students, which left him little time for field research. A friend told him about a job at the Geophysical Institute, where Smith had hoped to work since high school.

"I wasn't looking for anything new, but I couldn't pass up a chance to work at the institute," he said. "Had I not been offered the job, I would not have applied anywhere else."

After being hired as an associate professor of physics in 1984, Smith, his wife Isa, and their children, Claire and Andrew, moved to Fairbanks, along with an antique

Right—Professor of Physics and Geophysical Institute Director Roger Smith has a full schedule, which combines conducting research and guiding the institute.

PHOTO BY EVELYN TRABANT



1936 Riley Kestrel car.

Smith, who continued to specialize in optical observations of upper atmosphere winds and temperatures, was promoted to professor in 1989. He led a research team that became the first to successfully create 24-hour independently operating instruments to measure these properties. One of these instruments is installed at Halley Bay, Antarctica, and another in the Svalbard Islands of Norway in the Barents Sea.

As institute director, Smith's vision for the future includes ventures into commercial enterprise. As part of this endeavor, the Honeywell Corporation has petitioned the institute to lease lands available at Poker Flat Research Range to downlink satellite data.

Smith, who served as the institute's associate director from 1996 to 1999, says his leadership style involves matching faculty and staff skills with their interests and career aspirations.

He emphasizes esprit de corps within the institute, and wants to continue the



PHOTO BY DEB COCCIA

Left—The Elvey building on the West Ridge of the UAF campus is home to the Geophysical Institute, where Smith leads more than 350 faculty and staff members.

seven research groups within three main themes: space and upper atmosphere, global climate change, and earth sciences.

New research projects involving satellite data, increased use of new instrumentation at Poker Flat, and collaboration with IARC have been planned for these areas.

While not at work, Smith sings tenor in numerous musical settings, including a church choir, a jazz quintet, a barbershop ensemble, and vocal groups associated with the University of Alaska Fairbanks Summer Arts Festival.

Smith's daughter, Claire, has inherited a love for music; she works as a violinist in Missoula, Montana. His wife, Isa, creates "wearable art" and enjoys sewing and quilting. Smith's son, Andrew, graduated from a Presbyterian seminary, and is a pastor in Northern Ireland, where he lives with his wife and their two children.

Geophysical Institute Celebrates Fifty Years



The University of Alaska campus in 1929.

Christian Elvey traveled from Washington, D.C. to the newborn Geophysical Institute at the University of Alaska Fairbanks five decades ago.

Elvey, who served as institute director from 1952 to 1963, later recalled his first impressions:

“I went up to Alaska and found Sydney Chapman and a bunch of boys,” Elvey said, referring to the renowned British physicist and the group of young graduate students surrounding him.

That “bunch of boys” performed research that helped establish the institute as an international leader in geophysical studies. Several of those graduate students are still active researchers. Syun-Ichi Akasofu, who came to the institute in 1958, is now director of the International Arctic Research Center. Professor Emeriti Eugene Wescott and Charles Deehr arrived the same year.

“We were a pretty small group then,” said Deehr, who currently produces the institute’s aurora forecasts. “We were do-

ing a lot of fascinating stuff at work, but we had academic requirements too. We had to grow up fast.”



Seaton (right) at Ballaine Lake Receiving Station doing long-range radio propagation in the 1940s. Fairbanks then had a population of about 7,000.

In 1950, 15 scientists were on staff at the Geophysical Institute. Today, the institute supports more than 70 faculty members.

The institute was created in 1946 by an act of Congress, in part because aurora activity at high latitudes interfered with high-frequency radio equipment used by the U.S. armed forces.

Aurora research and other studies of the ionosphere comprised most of the early research at the institute. The 1960 hiring of Professor Emeritus Carl Benson fueled expansion into other areas of geophysics. Benson, who continues to perform research today, helped form the institute’s snow, ice and permafrost group. Diversification continued when Keith Mather,

the institute director in 1963, hired researchers who specialized in atmospheric sciences and seismology. Seismological research at the institute gained national importance in the wake of the Great Alaska Earthquake of March 27, 1964.

Below—In 1968, construction began on the new eight-story home of the institute located on UAF’s West Ridge.

Right—The completed Elvey Building, which houses the Geophysical Institute today. The International Arctic Research Center was built adjacent to the Institute in 1998.



Research groups at the Geophysical Institute now include space physics; atmospheric sciences; snow, ice and permafrost; tectonics and sedimentation; seismology; volcanology; and remote sensing.

In addition, the institute-directed Poker Flat Research Range remains the

1937—Veryl Fuller and Ervin Bramhall publish a paper on research in which they determined the height of the aurora. Their work, based at the University of Alaska, helped convince Congress to authorize creation of the Geophysical Institute nine years later.

1946—Members of the U.S. Congress authorize an appropriation for the establishment of the Geophysical Institute.



1949—Stuart Seaton hired as the first Geophysical Institute director.



1950—Seaton (left) resigns over a funding battle with university president Terris Moore. Most institute staff resign with Seaton. Moore appoints UAF Chemistry Professor William Wilson (above) as director.



1951—Wilson (left) recruits Sydney Chapman (above) to serve as advisory scientific director and visiting professor.

1952—C. T. Elvey (right) is named director.



only university-owned rocket range in the world.

“Of all similar U.S. research institutions, the Geophysical Institute has the broadest spread of interests—from the center of the sun to the center of



Earth,” said current Director Roger Smith. “We’re very successful at spanning that distance.”

During the 50th anniversary celebration in early May, scientists past and present spoke about the sense of community and camaraderie at the institute.

“The institute was, and is, a family, where people care about and look out for one another,” said Al Belon, associate director from 1976 to 1984. “It’s also a place where people have fun together.”

Belon recalled institute pranks, such as the time Bill Stringer, then a graduate student, installed a fake “car bomb” in Belon’s engine. When Belon started his car, he heard a loud noise and saw



Above—Syun Akasofu and John Davies work with USGS representatives to create the Alaska Volcano Observatory (1988) and the Alaska Earthquake Information Center (1989).

Left—A glaciology climate team, which included Gerd Wendler, Gunter Weller, and Carl Benson (pictured), work in 1969 on McCall Glacier in the Brooks Range.

smoke pouring out from under his hood. The engine and Belon’s sense of humor were unharmed.

Decades earlier, Elvey was the target of mischief, enhanced by the fact that his birthday fell on April 1. One year a balloon hiding in the middle of his cake exploded when cut.



The Geospace Environmental Data Display System (GEDDS) is set up at Poker Flat Research Range.

Others remembered when Wescott, an avid mountaineer, rappeled off the new Elvey building, and when Merritt Helfferich, associate director from 1988 to 1993, used food coloring to turn the institute’s water supply green on St. Patrick’s Day.

“Leading a research institute is not like conducting a symphony orchestra,” said Akasofu, institute director from 1986 to 1999. “Musicians follow a conductor’s baton, but scientific researchers are creative and independent thinkers. It’s often like trying to herd elephants, hyena, and zebras on the African savanna.”

1957-1958—During the International Geophysical Year, T. Neil Davis and Elvey developed the all-sky camera.



1963—Australian scientist Keith Mather (above) is named director.



1969—The first rocket was launched at Poker Flat Research Range, the brainchild of T. Neil Davis (left).

1976—T. Neil Davis becomes acting director.



1977—Juan Roederer (above), recruited from the University of Denver, becomes director.



1999—The International Arctic Research Center opens. Akasofu moves next door to serve as its founding director.



2000—After an international search, Roger Smith (left), professor of physics, is named director of the Geophysical Institute.



1986—Syun-Ichi Akasofu (left) succeeds Roederer as director.

Rockets Launched from Poker Flat



PHOTO BY ULRIKE HAUG

Shown is a Black Brant XII rocket launched from Poker Flat Research Range by Charles Carlson in February, 2000.

Two rockets launched from Poker Flat Research Range to study the aurora during the 2000 season. The next launch from the range is scheduled for 2001.

The first rocket launched from Poker Flat at 10:45 p.m. on February 24. The Black Brant XII, which contained one

main payload and two sub-payloads, reached a maximum height of 720 miles during its 20-minute journey. Instruments contained in the payloads measured the fine-scale structure of the aurora, according to Principal Investigator Charles Carlson, of the University of California-

Berkeley.

The second and final rocket launch of the season occurred at 9:30 p.m. on February 25. The Black Brant XII flew nearly 600 miles high through the aurora before it landed in the Arctic Ocean.

Instruments contained within the rocket examined small-scale particle interactions in the high reaches of the aurora, according to Principal Investigator David Knudsen, of the University of Calgary, who designed the rocket with the Canadian Space Agency.

Prior to Knudsen's launch, radar-equipped weather balloons were released every few minutes to determine wind direction and velocity.

In addition, two test rockets were fired to determine if tracking equipment on the ground was operational. For two hours after the test launches, scientists waited for aurora activity to move north of Poker Flat, where the rocket could intercept it.

Both rockets originally were scheduled to launch in January, however cloud cover associated with warm weather and a full moon forced launch delays.

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