Because of the frigid winters and vast amounts of snow, newcomers to Dartmouth might at first insist that Hanover is close to the North Pole. However, Hanover’s seemingly arctic climate is not its sole tie to the earth’s polar extremes.

The Institute of Arctic Studies, currently lead by Ross A. Virginia, has connected Dartmouth students and faculty to Northern regions since its founding in 1989 by Oran R. Young. A program of the Dickey Center for International Understanding, the Institute focuses on relationships between “complex social systems and the biological and physical systems that together make up the natural environment” of the Circumpolar North (http://www.dartmouth.edu/~arctic/index.html). The Institute comes from a long tradition of Arctic interest here at Dartmouth, originally stemming from Vilhajalmur Steffanson, who’s visit to campus in the 1930s created so much interest in Arctic regions that Northern Studies became one of Dartmouth’s most popular majors and remained so into the 1960s.

Since Virginia has taken on the position of acting director, the Institute has been redefining its goals in an effort to include both Northern and Polar regions instead of concentrating strictly on the Arctic, as in the past. Virginia has also set up informal sessions to help students find research opportunities in the Arctic and Antarctic. The Institute is looking to find new ways to support student and faculty research as well as provide funding for conference events such as the Yukon International Wind Energy Conference in Whitehorse, Yukon and the National Science Foundation Office of Polar Programs open science meeting on the Study of Environmental Arctic Change (SEARCH) in Seattle, Washington. In addition, Virginia aims to strengthen the relationship between Dartmouth and the Cold Regions Regional Engineering Laboratory (CRREL) through the Institute of Arctic Studies. CRREL, located in Lyme, NH, is an engineering research and development center for the United States Army Corps of Engineers. Focusing on engineering in cold regions, CRREL has excellent facilities for cold regions research, thus presenting excellent opportunities for Dartmouth student research.

Virginia sees this time as an “opportunity to rethink the mission of the Institute. Within eighteen months the Institute should have a new mission, a new set of goals, and should more directly engage students.” One new idea is to expand the curriculum and revive the Northern Studies courses that were offered in the past. This year was the first offering of College Course 3 (COCO 3), an interdisciplinary course on Polar Regions entitled “Pole to Pole: An Introduction to the Earth’s Cold Regions.” This course, co-taught by Virginia himself and Dr. Mary Albert, a research mechanical engineer at CRREL, focused on a wide range of Cold Regions disciplines from the physical sciences and politics to anthropology of endangered cultures. “There seems to be student interest,” explains Virginia, who views this course as a “feeder course into a more developed Northern Studies curriculum. Eventually we would like to facilitate more student/faculty exchange with a Foreign Study Program.”

Virginia, the Albert Bradley Third Century Professor in the Sciences, is an ecosystem scientist who has conducted research in the polar, desert regions of Antarctica since 1989. Interested in terrestrial systems’ biogeochemical cycles and the effects of human impact on them, Virginia studies processes such as desertification and climate change on plant-soil interactions and soil-system ecology and biodiversity. His original research sites were located in the Chihuahuan Desert of New Mexico and the North Slope of Alaska. Eventually, Virginia sought a place to study soils and soil biodiversity without plant interference mediating biogeochemical cycles. Antarctica became the perfect site for such a study.

A colleague suggested the McMurdo Desert Dry Valleys in Antarctica where soils and terrestrial life exist without the mediation of plants. Upon receiving soil samples from the region, Virginia visited the McMurdo Dry Valleys for the first time. He recalls, “As a teenager I was hooked by Scott’s adventures and fascinated with the poles through the British heroic polar literature.” Of his first visit to Antarctica he remembers, “I was satisfied by the science and clearly the adventure. There is a dual attraction. You get polar fever after having gone there.”
His initial work in Antarctica led to a bigger project with the NSF McMurdo Dry Valley Long-Term Ecological Research Program, of which he is currently a co-principle investigator.

Due to the fact that Antarctica’s summer begins in late December and extends into Early February, Virginia is able to take advantage of the D-Plan. With a short field season, he combines lab and field work in Antarctica with lab and modeling work here in Hanover. Virginia calls McMurdo Station, the main station for science expeditions in Antarctica, “a highly coordinated program.” He describes how “the NSF (National Science Foundation) gives you everything you need such as, gear, safety briefings, basic skills, etc. There is a lot to know before you begin field work, but you can show up in Christchurch, New Zealand in flip-flops, and they will outfit you.” Virginia and his colleagues balance their time between the Desert Valleys and McMurdo Station. At McMurdo Station, Virginia can do analytical and chemical work in the well-supported modern laboratory facilities. Virginia’s team takes a helicopter in and out of town to their main camp at Lake Hoare in the Taylor Valley, where they typically spend a week at a time collecting soil samples and making physical measurements.

The majority of funding for Antarctic research expeditions comes from the NSF as well as from NASA and university grant money. However, getting to Antarctica can be difficult due to the high expense, shortened calendar year, and limited slots. Therefore, there are limited opportunities for student research in Antarctica as researchers need to work through the National Science Foundation, which can only support a few thousand people per season. Nevertheless, Dartmouth students, including Katie Catapano ’99, who went twice to work with Virginia, have made the trip.

Virginia sees the Institute of Artic Studies as a means to support student research in polar regions, to which travel is difficult, as well as to connect students to researchers who are working in the field. It is an exciting time for Cold Region Studies here at Dartmouth as the Institute of Artic Studies redefines its goals over the next year, seeks better links between researchers at CRREL and students at Dartmouth, and revives a Cold Regions curriculum for a growing number of interested students.

Vilhjalmur Stefansson &
The Stefansson Collection on Polar Exploration in the Rauner Special Collections Library

Vilhjalmur Stefansson was a well traveled explorer who made numerous trips to the arctic during the early 1900s. An author himself and a collector of Arctic literature, Stefansson became a well-known scholar whose research and publications changed previous understanding of polar regions. He first arrived in Hanover in 1927 upon hearing about the Dartmouth Outing Club, which, as one of the oldest in the country, he wanted to support. He came to Dartmouth to give four lectures under the Guernsey Center Moore Foundation Fund. His presence was so popular that one student noted “He combines as do few others a record of achievement in polar exploration which has made him world-famous with all the powers of a great public speaker.” It was around this time that he began to amass an enormous collection of polar literature and manuscripts. By 1941, the United States Navy took interest in the collection. Upon inspecting Stefansson’s collection in his home in New York City, R. A. J. English of the United States Navy recorded, “This office and library occupies three apartments, or about twelve rooms. The library contains several thousand volumes of polar literature, the greater part of which pertains to the Arctic. Many of these volumes are very rare, and probably are not available elsewhere in the United States. The collection was acquired during the last fourteen years and is valued by Dr. Stefansson at $200,000.”

During and after World War II, Stefansson continued to lecture and visit Dartmouth occasionally. By 1947, he was officially the Arctic Consultant to Dartmouth College. He was appointed annually and remained in Hanover with his wife, Evelyn, for the rest of his life. He eventually donated his entire Arctic collection to the College, which then became the focus of the College’s Northern Studies Program.

The collection contains printed materials, manuscripts, photographs, and vertical files all including diaries, expedition records, regional histories, correspondences, personal papers of many explorers, articles, clippings, photographs from the Canadian Arctic Expedition of 1913-1918, and photographs of expeditions, ships, people, flora, fauna, and equipment. Much of the material from Antarctica concerns events prior to World War II, while the Arctic region collection contains materials on events prior to 1930. As Stefansson personally worked in the Arctic, the majority of the collections focuses on the it.

A world famous polar-explorer and researcher, Vilhjalmur Stefansson provided Dartmouth College with a priceless collection and a legacy of interest in polar regions.

http://www.dartmouth.edu/~arctic/stefansson/stef_collection.html