

Arctic adventurer studies changing atmosphere

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(PhysOrg.com) -- The average temperature is -50 F, and the sun has just begun to make an appearance, but University of Idaho doctoral student Chris Cox doesn't really mind: it's the chance of a lifetime to study weather patterns in Greenland.

"This is a great opportunity to study my discipline and further my doctoral work," said Cox. "Their belief in me that I can handle it makes me want to work harder."

Cox will be taking atmospheric, climate and precipitation measurements from a mobile science facility on skis at Summit Station, a small science camp atop the Greenland [ice sheet](#) for the next three months, returning to Idaho in April. Summit Station is unique because it is 10,500 feet above sea level, making it of great interest to the National Science Foundation's Arctic Observing Network.

The University of Idaho has partnered with the University of Colorado at Boulder, University of Wisconsin at Madison and University of Oklahoma for the project, which is taking a close look at the atmosphere and clouds over the Greenland ice sheet, which ultimately should help scientists understand how climate change is affecting the ice sheet.

Project principal investigator Von Walden, University of Idaho associate professor of geography, said it is a known fact the melt rates are large and increasing, but researchers don't know enough about what is causing the melt and what global impact it will have.

Cox will serve as one of three science technicians -- along with a station manager, a mechanic and a heavy equipment operator -- using an instrument suite consisting of instruments, like a cloud radar, microwave radiometers, an infrared spectrometer and an X-band precipitation sensor. He is the first graduate student to hold this position for this project at Summit.

“There was never a discussion of whether he could do this or not. We all have full confidence in Chris,” said Walden. “He opens the door for other students to work on this project at the station.”

This isn't the first visit to Greenland for Cox; he spent time at the station in the summer helping out. His inaugural appointment has inspired organizers to look at bringing students up for the summer, when it's slightly warmer, and bring them back for a winter experience. In addition to the mobile station, there are sleeping quarters and a dining facility. And that's it for hundreds of miles.

Cox flew in on Feb. 5. After a seven-to-10-day overlap with the current crew, the new group will take over their duties until mid-April. During that layover, Cox will meet up with Idaho alumnus Lance Roth, who is currently working as a science tech.

“The weather is going to be extreme, but the experience will be well worth it,” said Cox.

Cox earned his bachelor's degree in anthropology at the University of Maine and his master's in geography at the University of Idaho with the intention of using geography to further his archeology skills. Under Walden's tutelage, Cox's interests turned toward hard science/environmental science and climate issues. This project will supplement his doctoral project.

“It really goes along with what I’ve been studying, plus the data that I collect will be useful for my project,” said Cox. “I fell into this at a good time to get involved.”

Building on taking data, the group has submitted a new proposal to the National Science Foundation to analyze the data coming out of the station.

Provided by University of Idaho

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