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## Oceanographer gets \$1 million to study sea ice

Staff Report

University of Alaska Fairbanks oceanographer Harper Simmons is the recipient of a grant worth more than \$1 million to study the effects of sea ice on the motion and mixing of different layers of water in the Arctic Ocean

Simmons, a research assistant professor at the UAF International Arctic Research Center, is collaborating with a large team of other UAF scientists on the project. Working from the Russian icebreaker Kapitan Dranitsyn, the team will install observational moorings at several locations in the Laptev Sea, off the northern coast of Siberia.

The moorings, buoys that are anchored to the ocean floor and that float about 330 feet below the surface, contain instruments that measure ocean current, salinity, sea-ice drift and temperature throughout the different depths of the ocean.

Simmons hopes that the information gleaned from these instruments will help him determine how sea-ice cover affects the way energy from wind is transferred to the middle and lower depths of the ocean.

"I am interested in the way in which atmospheric storm systems break up the ice, set the ice in motion and then in turn set the underlying ocean into motion," he said. "The reason we are interested in this is there is a lot of heat in the Arctic Ocean."

Unlike other oceans throughout the globe, the Arctic Ocean is warmer in mid-depths than it is on the surface, Simmons said. "The motion that results from these storms may be important for stirring up the upper ocean and drawing heat out of the Arctic Ocean."

And that heat, if released, is enough to melt all of the sea ice in the Arctic. Sea ice is important to the overall understanding of climate change because its presence or lack thereof affects how much solar radiation, and hence heat, is reflected back into space, Simmons said.

"A big part of why our planet has the climate it does now is because the Arctic is this seasonally ice-covered ocean," he said

The moorings will likely be installed next summer.

The grant, awarded by the Defense Experimental Program to Stimulate Competitive Research, is just one of 25 grants awarded by the Department of Defense this year, under a program designed to expand research opportunities in states that have traditionally received the least funding in federal support for university research.

In all, \$11.5 million was awarded to universities across the country.

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