Mathematician uses skills to study Greenland's retreating glaciers (w/ Video)

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Many outlet glaciers in Greenland feed ice from the land into fjords, where discharge of icebergs and melting of the glaciers by warmer ocean waters contribute to rising sea levels.

David Holland of New York University (NYU) studies what happens in the fjord when ice meets water—how the dynamics at the margin between ice and sea are changing, and what those changes could mean in the future for global sea level rise.

In recent years, the rate of ice flow from the land to the water has accelerated in some glaciers, and the melting of the ice in the fjords has also increased. The purpose of this project is to improve the understanding of the role of the ocean in these fast, dynamical changes at the margin of the Greenland Ice Sheet.

The glaciers feeding into two fjords, Jakobshavn on Greenland's west coast and Helheim on the east coast, have accelerated significantly in recent years. Holland and his team have been making oceanographic and meteorological observations in these fjords. These observations are being used to develop and validate a coupled model of the ocean and ice sheet that will enable improved understanding of processes that contribute to sea level rise.

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