

**Mark Fahnestock**

**Professor**

Geophysical Institute, University of Alaska Fairbanks

**“Pervasive Glacier Change in Greenland Since 2000”**

Rapid changes in a few of Greenland's largest outlet glaciers are well known from numerous studies. Most of the rest of the 242 glaciers wider than 2 km that flow into the ocean have not been as well documented. New satellite data has allowed Twila Moon and I to track flow in all of these systems at short timescales, documenting both seasonal flow variations and inter-annual changes that reflect glacier discharge response to local forcing in great detail. Seventy percent of the glaciers measured by Joughin in the year 2000 have changed speed by more than 20%, and no glacier has advanced its terminus significantly over the interval 2000-2016, while more than half have retreated. The patterns of acceleration, stagnation, and retreat have implications for how ice sheet margin retreat happens during warming.