OLD DOMINION UNIVERSITY
Center for Coastal Physical Oceanography

INSTITUTE FOR COASTAL ADAPTATION & RESILIENCE

Fall 2020 Virtual Seminar Series

"EXCEPTIONS TO BED-CONTROLLED ICE SHEET FLOW AND RETREAT FROM GLACIATED CONTINENTAL MARGINS WORLDWIDE"

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3:30 PM

Zoom link

Abstract

Realistic projections of ice sheet behavior hinge on how fast-flowing ice streams evolve and the extent to which marine-based grounding lines are stable. Bed topography and substrate are widely considered to be important controls on ice-sheet flow and retreat. Nonetheless, few efforts assess the ubiquity of these controls. Colleagues and I ask to what degree catchment-scale bed characteristics determine ice flow and retreat, drawing on the landform imprint of paleo-ice sheet decay from 99 sites on continental shelves around the world. Through this diverse dataset, we find notable exceptions to accepted 'rules' of behavior: banks are not always an impediment to fast ice flow; retreat may proceed in a controlled, steady manner on reverse slopes; and, surprisingly, substrate geology does not dictate the style of ice flow or retreat. Furthermore, we explore the implications of these exceptions and discuss the predictability of ice flow and retreat across a range of bed conditions.

Biography

Lauren employs sediments and landforms to explore subglacial processes, changes occurring at ice-sheet margins, and ocean conditions surrounding marine-based ice sheets. Through teaching and mentoring, she builds supportive spaces for novice students and early-career researchers in the fields of geoscience and glaciology. She has an undergraduate degree in Geology from Oklahoma State University, a Ph.D. from the University of California Santa Barbara, and completed a post-doc at Rice University prior to arriving at the University of Virginia in 2018.