Jonathan Kingslake, Columbia University and Lamont-Doherty Earth Observatory

Monday, April 29, 2019, 4pm-5pm; Guyot 220.

"Antarctic surface hydrology and its impact on ice-sheet mass balance"

Abstract:
Antarctic ice sheets may be threatened by warming-induced surface meltwater, which can pool and fracture the surfaces of floating ice-shelves which buttress upstream glaciers. I will discuss these dynamics in detail and present a simple framework for quantifying the impact of Antarctic surface melting on ice-sheet mass balance. I will then quantify hydrological controls on where meltwater inundation occurs, as well as which parts of ice shelves are most vulnerable, using a variety of models and datasets.

The study of Antarctica's surface hydrological system is in its infancy. My hope is to expose the audience to these fascinating phenomena, and to demonstrate the wealth of interesting processes at play in this under-studied system.