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**Monday, January 22nd, 2018**
**11:10 A.M. — 12:10 P.M. KN132**

“The Velocity Structure of the Earth: Adding a few pieces to the puzzle”

The ground beneath our feet may be more interesting than you have imagined: why are continents above sea level? Why do they remain stable for millions or billions of years? How did they form initially, and what happens when they collide or rift apart? One classic observable from seismology that provides some insight into these questions is the measurement of surface-wave phase velocity. Wave speed in a material is influenced by a variety of factors, including temperature, composition, and past deformation. I will focus on a variety of two-station methods that we can use to study the phase velocity of the earth, and show maps from the United States and Canada. Combining data from the large-scale temporary network of seismometers in the United States with permanent and temporary Canadian stations, we are able to study both the western United States, where tectonic activity is ongoing, and a region in central Canada centered on Ontario and the Great Lakes that has not had active tectonic activity in roughly a billion years.