

Apr. 4	<u>Christie Rowe</u> McGill University, Canada	Geometric complexity in earthquake ruptures and fault healing Geology of faults; observational field geology, structural geology, metamorphic petrology, economic geology, geochemistry, and geophysics to study processes which generate earthquakes and create ore deposits.	Alissa Kotowski and Catherine Ross	<u>The Robert H. Cuyler Endowed Lecturer</u>
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Title: Geometric complexity in earthquake ruptures and fault healing

Abstract:

Recent events have demonstrated that natural faults are multi-stranded anastomosing networks of discrete surfaces encased within more slowly deforming zones. During rupture and during the healing period after earthquakes, the behavior of the system depends on the structure and the composition of both the fault surfaces and the wall rock. I will show how my research group has used field studies of exhumed seismogenic faults to investigate the complexity of earthquake ruptures as well as the distribution of deformation during after-slip and interseismic healing. The power of field observations to examine deformation from the crystal lattice scale up to 10s meters is a necessary complement to seismological and geodetic studies of active faults which have excellent temporal resolution but cannot spatially resolve the lengthscales of deformation which are most important to the fault strength evolution.

Short bio:

Christie Rowe studied at Smith College and the University of California Santa Cruz (PhD 2007). She was a lecturer at University of Cape Town (2006-2009), a MARGINS postdoc at UCSC (2010-2011) and since 2011 has been the Wares Faculty Scholar at McGill University in Montreal, Canada. She holds the Canada Research Chair in Earthquake Geology and enjoys teaching field camp.