

**Nicole Ferrie**, University of Texas at Austin, Austin, TX, for her project: *A Predictive Model of Dewatering in Shallow Subduction Complexes*.



Nicole Ferrie is a 3<sup>rd</sup> year PhD candidate studying boron geochemistry at the University of Texas at Austin in the Jackson School of Geosciences. She is co-advised by Dr. Demian Saffer, PI of the Geomechanics Laboratory and Dr. Daniel Breecker, PI of the Stable Isotope Biogeochemistry Laboratory.

For her research, Nicole uses boron geochemistry to trace fluid release and migration pathways in shallow subduction systems. She is developing a geochemical and geomechanical model of boron desorption that can be used globally to trace

fluid pathways. Nicole is performing adsorption experiments and 1-D P-T modeling with drill core sediment and IODP logs from Hikurangi, Barbados, Costa Rica, Cascadia, Nankai and the Japan trench.

By improving our knowledge of fluid flow in subduction zones, we can enhance our understanding of seismogenesis and more accurately assess seismic hazards.

With the support of the Lincoln S. and Sarah W. Hollister Graduate Student Research Award through MGPV, Nicole will conduct X-Ray Photoelectron Spectroscopy and Inductively Coupled Plasma Mass Spectrometry on subducting plate sediments. This work is integral towards building the model, and supporting Nicole's future career goals, and for this she is extremely grateful.

Previously, Nicole graduated from the University of Washington with a double major in Atmospheric Sciences and Earth and Space Sciences, with a focus in metamorphic petrology, supervised by Dr. Cailey Condit. For her honor's thesis, Nicole studied the progressive alteration of rocks through fluid-rock modification and deformation from a paleo subduction interface in the Central Alps. After graduation, Nicole will pursue a research professorship to study how the hydrologic system of subduction zones affects seismogenesis. Outside of academia Nicole loves all things in nature, including hiking, backpacking, skiing, and trail running.