

Daniel Gregory Alberts Defense Presentation**When:** Friday, October 16, 2026**Location:** Gould-Simpson Rm 208*or***Zoom:** <https://arizona.zoom.us/j/83246333502>**Password:** zinrcon2410Committee: Dr. Mauricio Ibañez-Mejia, Dr. Paul Kapp, Dr. Jonny Wu, Dr. William McClelland,
Charlie Greig**Title:** RESOLVING CRUSTAL EVOLUTION AND TECTONIC ASSEMBLY THROUGH ZIRCON U-PB GEOCHRONOLOGY AND LU-HF ISOTOPES: APPLICATIONS TO THE STIKINE TERRANE IN THE NORTHERN CORDILLER

Abstract: Abstract: This dissertation investigates the crustal evolution and tectonic assembly of the Stikine terrane in the northern Cordillera using coupled zircon U-Pb geochronology and Lu-Hf isotope geochemistry. New igneous and detrital zircon data from the Paleozoic Stikine Assemblage reveal two major phases of Carboniferous arc magmatism, evidence for interaction with older crustal sources, and previously unrecognized links between Stikinia and adjacent Tracy Arm-affinity crust, providing new constraints on the origin and development of one of the Cordillera's largest accreted terranes. The study also examines the provenance and tectonic evolution of the Bowser Basin, where integrated zircon and sedimentologic data identify sediment contributions from Paleozoic and Mesozoic arc systems, syn-collisional plutonism, and Late Jurassic magmatism associated with the incipient Coast Mountains Batholith. Together, these results demonstrate the power of coupled zircon U-Pb and Lu-Hf analyses to reconstruct crustal growth, sediment dispersal, and terrane interactions, leading to a revised tectonic model for both the Paleozoic evolution of Stikinia and the Late Jurassic development of the Bowser Basin.