PROJECT TITLE: Investigating the Late Cenozoic exhumation of southeast Alaska

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Project Description

The student working on this project will conduct fission-track (FT) analysis on detrital apatites from the Late Cenozoic deposits of the Gulf of Alaska. The sand-size material will be analyzed from four industry boreholes that recovered the sediments that were eroded from the mountainous regions of southeast Alaska since 15 Ma. Through this project the student will learn how to count FT using a stereomicroscope equipped with a motorized stage system and a digital camera that is available in the thermochronology laboratory of Dr. Enkelmann (Department of Geology). After the FT measurement is done the student will calculate single grain ages for each sample, and analyze the resulting age distribution for component age populations using binomial peak fitting procedure. The age peaks are used for the interpretation of the exhumation pattern of rocks in the sediment source region. The student will use lag-time diagrams to identify changes in exhumation rates through time, which has implications for mountain building and erosion processes.