SOUTH DAKOTA MINES
An engineering, science and technology university

Department of Geology and Geological Engineering
GGE Research Highlights…

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Please visit Dr. Waldien's research page to learn more about his research!

SDSM&T Geology & Geological Engineering
5 mins ·

GGE Research Highlights...

Dr. Trevor Waldien's research aims to understand the tectonic evolution of orogenic belts.

Focused mainly on western North America (from California to Alaska), lines of inquiry include:
1. Did these rocks form as part of North America? If not, where did they come from, when did they get here, and what fault systems brought them here?
2. How do long-term lithospheric processes such as- generation of topography, shifts in loci of magmatism, or fault system evolution record plate boundary evolution?
3. How do fault systems cooperate/coevolve to accomplish relative plate motion, both in present day, and in the geologic past?
4. What are the tectonic/magmatic conditions under which western North America's mineral and hydrothermal resources formed?

Our group addresses these questions using a variety of structural geology tools, detailed petrography, geochronology, thermochronology, and good ol' fashioned geologic/geomorphic mapping. By integrating the field-based and analytical datasets, we gain a holistic understanding of deformation features in the rock record, the timing/rates at which the features formed, and then use those data to understand tectonic processes operating at the scale of the orogen.

To learn more about structural geology and tectonics research at SD Mines, click the link below:
https://sway.office.com/4Gjfj3N4R59U6iCI?ref=Link

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