

IRGF Final Report

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Project Title: Environmental change and early hominins in rift-valley lakes of the Baringo Basin, Kenya

1.1 Project Summary

The sedimentary rock record in the Baringo Basin of Kenya and in the Afar region of Ethiopia preserves evidence of climate influence on changing environments, as well as the influence of hydrothermal systems on these environments. The studied successions were deposited approximately 3 million years ago, which was a time of speciation in early hominins. Early human ancestors in the genus *Australopithecus*, for example, lived in the lake basins of Kenya and Ethiopia, where lake levels fluctuated dramatically and hot-springs influenced the lake chemistry.

1.2 Student involvement

1

1.3 Dissemination and Knowledge Mobilization

Kayla Praill submitted an abstract for the Rocky Mountain Geological Society of America meeting in May 2025. Due to the uncertainty in US/Canada border-crossings this year, Kayla opted not to travel to the US. I presented our poster there, in Provo UT.

1.4 Project Outcomes and Impacts

The outcomes of this IRGF grant include: Travel to Kenya to retrieve sediment samples collected previously. These samples will be studied in Winter 2025 by a GEOL 5201 research student, the results and interpretations from this work will be presented at conferences and included in future publications. Kayla Praill was hired for Summer 2024 as a NSERC USRA. The IRGF grant supported my portion of her salary. During her summer work, 70 samples were processed for XRF analysis (which continued into a GEOL 5201 research course for Kayla in Fall 2025). This work was presented at the Rocky Mountain Section Meeting of the Geological Society of America in Provo, UT, May 2025. As part of her summer work, Kayla digitized the hand logs for more than 200 m of core from Afar. This resource will continue to be used in presentations and publications in preparation for the Afar project. She completed two thorough literature studies for the Baringo Basin and for the Afar basin; organized a Mendeley database; she wrote two summary documents (one for each locality) that will be used in future publications; and she produced two stratigraphic charts and two maps, all to be used in future projects and publications.