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PhD position

Start Fall 2027

Apply by December 15, 2026

THE LAB

Olugboji Planetary Imaging and Earth Hazards Lab

Earth and Environmental Sciences

University of Rochester, New York

KEYWORDS

seismology
Africa
East African Rift
geodynamics
open data

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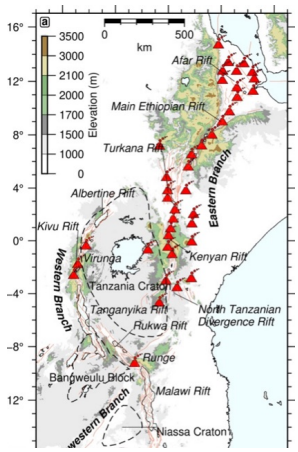
Book a 30-minute meeting:
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NSF collaborative award 2438437 · 2025–2028

Africa's crust and mantle from seismic data



Topographic map of the East African Rift with volcanoes, from Afar to Malawi (Figure 1a of Ajala et al. 2026)

The project

Understanding how Earth's outer shell moves and deforms is essential for explaining earthquakes and volcanic activity. Unusually hot mantle rocks lie beneath Africa and the East African Rift System, the most active continental rift on Earth. This NSF project, shared with Virginia Tech and Colgate University, tests a long-standing hypothesis: that coupling between the lithosphere and the asthenosphere controls how mantle convection moves the African plate.

What you will do

- Seismic models: build open-access, continent-scale models of Africa's crust, lithosphere, upper-mantle anisotropy and mantle discontinuities from AfricaArray and other data.
- Plate motions: compare the images with GNSS-derived plate kinematics and with geodynamic models (ASPECT) from the partner groups.
- Community: the project supports annual AfricaArray meetings and data-science workshops in South Africa.

Who should apply

A degree in physics, mathematics, engineering, computer science or the geosciences, and some programming (Python or MATLAB). Prior seismology is not required.

How to apply

1. Email Dr. Olugboji first with a CV, an unofficial transcript and a few lines on your background and interests.
2. Apply online at apply.grad.rochester.edu: Earth and Environmental Sciences, Fall 2027 term, by December 15, 2026.
3. PhD students in Earth and Environmental Sciences are normally supported for five years with a full tuition scholarship and a research or teaching assistantship. Strong applicants may also receive a University fellowship.

Also hiring: a postdoctoral researcher on either NSF project.