THE UNIVERSITY of EDINBURGH

Job Description

Internship Title: The Highland Boundary Fault: conducting geophysical fieldwork and developing outreach materials to better understand this important geological boundary

Department/ School	School of Geosciences
Reports To	Karen Lythgoe, University of Edinburgh – karen.lythgoe@ed.ac.uk Andrew Curtis, University of Edinburgh – Andrew.curtis@ed.ac.uk Amy Gilligan, University of Aberdeen- amy.gilligan@abdn.ac.uk PhD Mentor: Alissa Forsythe, University of Edinburgh – A.J.R.forsythe@sms.ed.ac.uk

Job Purpose

In this role you will assist in geophysical fieldwork across the Highland Boundary Fault in Perthshire, acquiring magnetic, seismic and possibly gravity data over several days at the end of June 2025. You will then have the opportunity to analyse some of the collected data together with your mentor. As part of the role, you will be tasked with developing outreach material for the general public, to explain the significance of the Highland Boundary Fault and the research – this could take several forms such as a blog article, video, artwork or hands-on activity.

Main Responsibilities

- Participate in geophysics fieldwork to collect data that will be used to image the structure of the Highland Boundary Fault (20%)
- Help to conduct data quality control when back in the office (20%) Perform initial data analysis jointly with mentor (10%)
- Develop outreach material for the general public (50%)

Knowledge Skills and Experience (required for the role)

Attribute	Essential	Desirable
Education, Qualifications & Training	- Pursuing a geoscience related undergraduate degree	

Knowledge & Experience	- Excellent written and oral communication skills.	Basic knowledge of faults and the geological history of Scotland/UK and eagerness to learn.

Person Specification

Planning and Organising
- Good time-keeping and organisational skills.
- Organise own work activities under guidance of supervisor and mentor.

Problem Solving
- Able to solve problems by themselves and ask for assistance when needed.

Decision Making
- Make day-to-day decisions, while consulting collaboratively with supervisor and mentor.

Key Contacts:
Karen Lythgoe (Line Manager), University of Edinburgh, karen.lythgoe@ed.ac.uk
Alissa Forsythe (PhD Mentor), University of Edinburgh, A.J.R.Forsythe@sms.ed.ac.uk

Dimensions
Closing date for applications: Wednesday 14th May 2025 (Midnight)
Start date: From: Commencing 16th June 2025
Hours per week and preferred pattern/ restrictions (if applicable): **35 hours per week for 6 to 8 weeks**

Additional Information

Project Outline
The Highland Boundary Fault (HBF) marks a fundamental divide in the landscape and geology of Scotland, separating the 'Highlands' and the 'Lowlands', forming one of the major geological features of the UK. Despite its significance in the tectonic evolution of Scotland, remarkably little is known about its structure and nature. This uncertainty has led to much debate on the role and history of the HBF [1]. For example, it has been proposed that the HBF is an ancient plate boundary that was active as a major strike slip and/or thrust fault (e.g. [2]). However, this is contested, with others (e.g. [1]) arguing that the landscape change across the fault is primarily controlled by differences in erosion rates. Studying ancient faults, such as the HBF with the fault core exposed at the surface, is key to understanding processes that occur at active boundaries today.
Unravelling the structure and properties of the HBF requires high-resolution geophysical investigations into the subsurface lithospheric structure. You will take part in the first high-resolution geophysical study of the HBF. You will assist with fieldwork to collect key geophysical data, including seismic and magnetic data (using a newly developed magnetometer). You will then quality control the data back in the office, and have the

chance to conduct initial data analysis. The collected data will form a key part of future research into the structure of the HBF as part of Alissa Forsythe's PhD.
An important part of this research is engagement with the public, and so you will also be tasked with creating engaging outreach material that explains the research, and the significance of the HBF more generally, to the public. This could be in the format(s) of your choosing, such as a blog article, video, piece of art, hands-on activity.

References

[1] Tanner, G. (2008). Tectonic significance of the highland boundary fault, Scotland. Journal of the Geological Society, 165(5), 915-921.
[2] Haughton, P. D. W. et al (1990). Provenance of Lower Old Red Sandstone conglomerates, SE Kincardineshire: evidence for the timing of Caledonian terrane accretion in central Scotland. Journal of the Geological Society, 147(1), 105-120.

Budget

A maximum of £500 towards research costs. This project will involve overnight stays for fieldwork.

Location

Grant Institute, Kings Buildings, James Hutton Road. There will also be fieldwork near Blairgowrie in Perthshire.

Health & Safety Requirements for the role

None

Key Job hazard information specific to the role

None

Programme Information

The Research Experience Programme (REPs), funded by NERC, offers paid research opportunities for undergraduate students. The programme is designed to address both demographic and diversity challenges in the environmental sciences, as well as thematic skills gaps, such as quantitative skills.
This is a valuable opportunity to gain hands on research experience, boost your employability, and explore potential pathways into further study or careers in environmental science.

For full details on how to apply and the selection process, please visit our REP webpage

Application Support

The University's Careers service provides a wide range of resources to support your application, including guidance on CVs, cover letters, and interview preparation.
Students undertaking a REP placement will also have the opportunity participate in the Edinburgh Award - a structured programme that helps you reflect on and gain recognition from the University for the skills and attributes developed during your internship.
For more information, you can book an appointment with a Careers Consultant via MyCareerHub.

Eligibility Criteria

To be eligible for a REP placement, applicants must meet **all** of the following criteria:

• Be currently studying towards their first undergraduate degree studies (including integrated Master's degrees) in a UK Higher Education institution, in any science discipline
Note: *Final year students are eligible if they still hold student status at the* ***start of the placement,*** *even if the student graduates during the course of the placement.*

• Be eligible for subsequent NERC PhD funding as defined here:

- A UK citizen who has been living in the UK for at least the past 3 years OR
- An EU citizen with pre-settled or settled status under the EU Settlement Scheme OR
- A non-EU citizen who has obtained the right to remain in the UK - known as 'indefinite leave to remain' (ILR) OR
- An International/EU student currently studying in the UK under a Tier 4 or Student Route Visa with validity until at least September 2025.

REPs **do not** meet the requirements for visa sponsorship. As such, students who are not currently residing in the UK or who do not hold a valid UK visa are not eligible to apply.

You cannot take part if you are a visiting student, or have previously taken part in REP programme.

Privacy Statement

In addition to the University's HR Privacy Information Notice, please read the Student and Graduate Privacy Statement: Internships and work experience programmes to understand how your personal information will be collected, used, and stored as part of the application process.

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