

# Investigating uncertainty in geological data collection

## Participant Sheet

Thank you for agreeing to participate in this research which is investigating uncertainties in how geological data is collected.

### What is this research about & why is it important?

Geological information such as rock fracture data is a key input into the numerical models which inform a range of geological and engineering applications. A range of methods and approaches have been developed to collect the geological information to input into these models. However, rocks are heterogeneous (that is, the rocks themselves are variable, the processes that they are subjected to are variable, and how they deform or fracture are therefore variable), and collecting fracture information is time consuming (field work) and limited by rock outcrop. Therefore the geological data that goes into these models will often be an oversimplification. The data that goes into one model may not necessarily be collected by one person. Different geologists might collect data differently; there are a range of fracture data collection approaches in structural geology, and the question of which method should be used and when is debated. This research aims to assess relative strengths of different methods of collecting fracture data in rocks, both in the field and from field photographs, by examining how well the approach captures structural heterogeneity in the rock, and how well the data is replicated by different people.

### What is expected of me today?

We have prepared some 'virtual' rock outcrops, constructed from photographs from the field site for Billy Andrews' PhD research. You will be asked to collect and record fracture data from these 'outcrops', working individually and also in small groups. Later, you will be invited to contribute to group discussion about how you found the tasks, and any issues that commonly cropped up when working in small groups. We hope it is fun!

### How will my data be recorded and stored?

At the start you will be asked to complete a short questionnaire about your knowledge and experience of geological data collection. You will then be asked to fill in a data sheet to record your observations of geological data and how long this takes you, and to make notes of any areas that you found challenging or issues that cropped up when working as a group. The project researchers may also make notes throughout the day. The short questionnaires, the data you collect, and notes made will be digitised following the workshop. Once digitised, this information will be anonymous, and will only be available to researchers involved in the project until the research is published in a peer review journal, when the anonymised data will become publicly available.

We aim to publish the research results in a scientific peer reviewed publication which will be made publicly available on the Strathclyde's Research Portal.

If you have any projects about the research, now or later, contact Jen Roberts ([jen.roberts@strath.ac.uk](mailto:jen.roberts@strath.ac.uk)) or Billy Andrews ([billy.andrews@strath.ac.uk](mailto:billy.andrews@strath.ac.uk))

## Statement of Consent

Your name [BLOCK CAPITALS] .....

I understand the information above and by signing this form, I agree that:

- I have read and understood the information about the research project and any questions that I have raised have been answered to my satisfaction.
- I understand that my participation is voluntary and that I am free to withdraw from the project at any time during the workshop, without having to give a reason and without any consequences. If I exercise my right to withdraw and I don't want my data to be used, any information that I have provided will be destroyed.
- I understand that anonymised data (i.e. data which do not identify me personally) cannot be withdrawn once the research reporting is complete (i.e. the data is digitised and the original data destroyed).
- I understand that any information recorded in the investigation will remain confidential and no information that identifies me will be made publicly available, unless I state otherwise.
- I consent to being a participant in the project.

Signature of participant: .....

Date: .....

Signature of investigator:.....

Date: .....

## Information about the Participant

These questions are to gauge how familiar you are with geological data collection.

*Please indicate your response by circling the answer that most applies to you*

1. What is your geological training?

- (a) No formal training; (b) Undergraduate degree; (c) Postgraduate degree; (d) Professional geologist;  
(e) other (please specify) .....

2. How would you describe how familiar you are with geological fieldwork?

- (a) No experience; (b) have experience of group fieldwork as part of undergrad/postgrad classes; (c) have experience leading or assisting some fieldwork; (d) have led or assisted numerous and/or extended field seasons;  
(e) other (please specify) .....

3. How would you describe how familiar you are with collecting fracture data?

- (a) No experience; (b) some experience as part of undergrad/postgrad classes; (c) quite experienced; I have collected fracture data in several settings on several field excursions; (d) very experienced; I have collected fracture data in a range of structural settings on numerous field excursions;  
(e) other (please specify) .....

We want to link up this information with the data that you collect. So we ask that you choose an ID to use, and that this is clearly written on the data forms that you complete. Your ID can be your name, or some other ID – whatever you feel comfortable with.

Once we have digitised the data (i.e. typed it up) it will be anonymised and we will then destroy the paper copies (i.e. the data won't have any record of your name or identity). This is in line with the University of Strathclyde's data protection policy which embodies the General Data Protection Regulation (GDPR).

Your participant ID: .....

*Thank you for completing this information.*