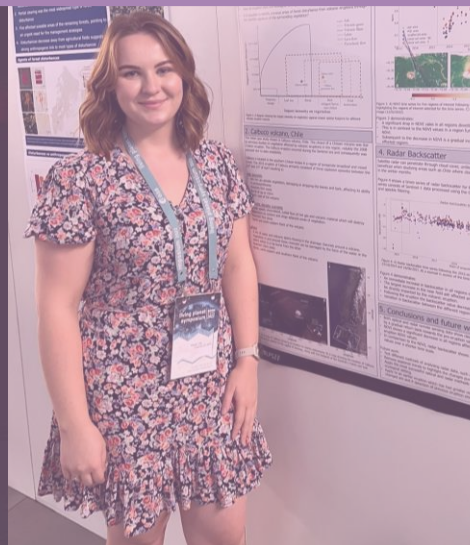


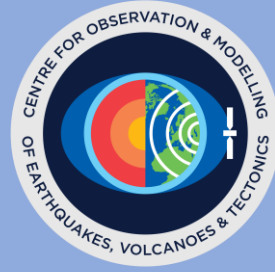


COMET celebrates International Women & Girls in Science Day 2023!



Dr Laura Gregory

University of Leeds, UK
Associate Professor



Laura utilises geological methods to understand the long-term earthquake cycle and has led field campaigns to fault scarps in Italy & Turkey. Geochemical data suggest that these normal faults have slip rates which vary over thousands of years, implying that a regular cycle of stress accumulation and release is not observed on these faults.

Laura has helped to establish a community where female scientists feel comfortable to discuss their research, as exemplified by her mentoring an undergraduate student through the COMET internship programme in 2022, and well as leading the COMET Women's Network since 2020.

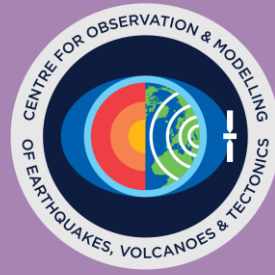
Paper: Determining Histories of Slip on Normal Faults With Bedrock Scarps Using Cosmogenic Nuclide Exposure Data: <https://doi.org/10.1029/2020TC006457>



Megan Udy

University of Leeds, UK

PhD Student

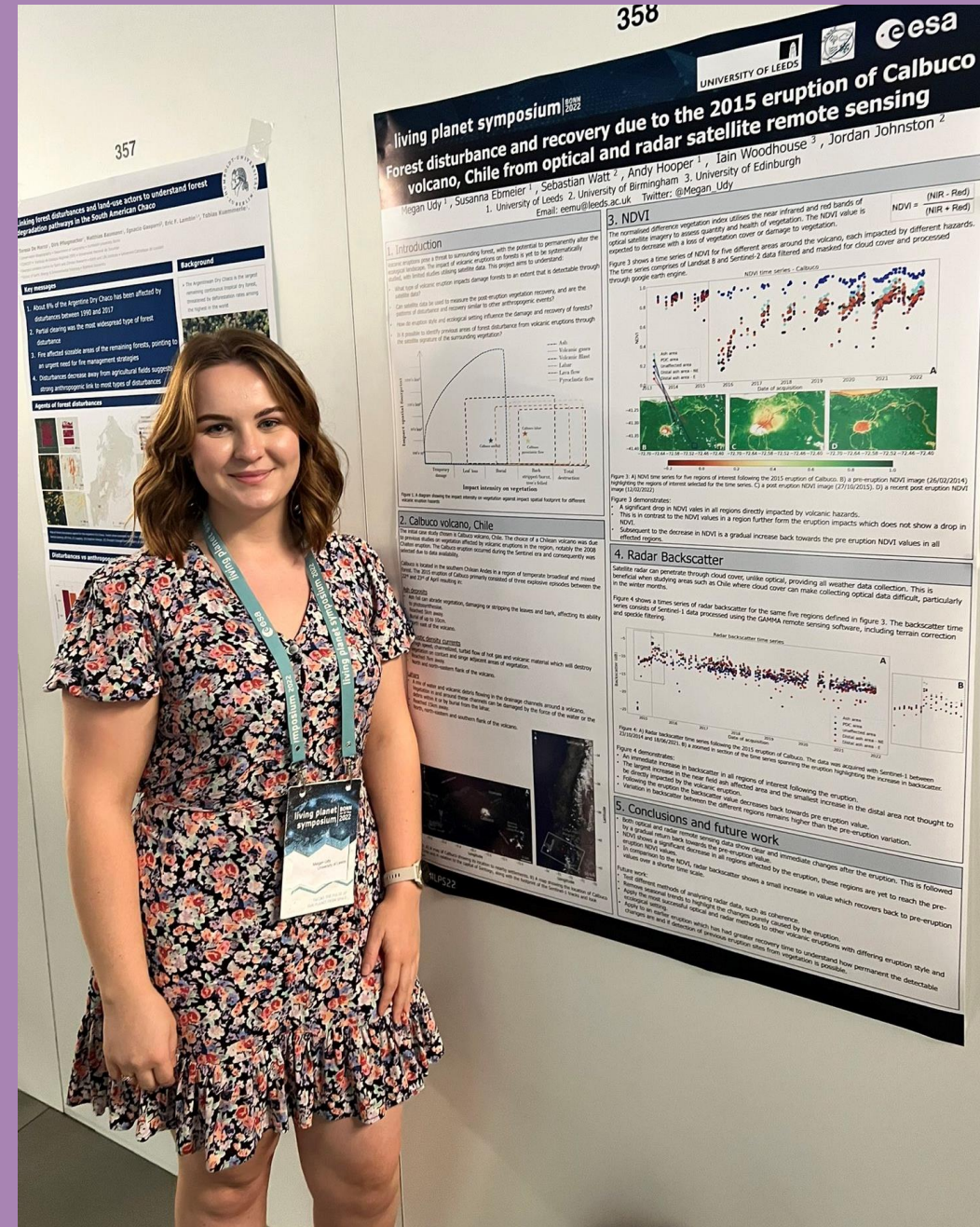


Megan's PhD project is based around detecting and monitoring vegetation recovery around volcanoes after eruptions. At the VMSG 2023 conference and the COMET 2023 student meeting, Megan presented her recent findings where she showed that using a combination of SAR backscatter data and optical imagery before and after the 2015 Calbuco eruption, areas of vegetation destruction and subsequent recovery are identifiable.

Keep up to date with what Megan is up to at:

https://twitter.com/Megan_Udy

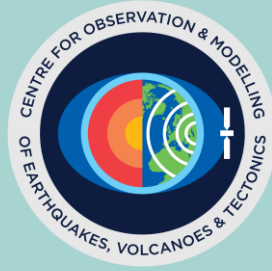
<https://environment.leeds.ac.uk/see/pgr/9460/megan-udy>



Prof Juliet Biggs

University of Bristol, UK

Professor



Deputy Director of COMET, Juliet has been a key contributor to developing the uses of InSAR as a tool for monitoring geodetic symptoms of tectonic and volcanic activity, mainly around Latin America and the East African Rift. More recently, focusing on game changing integration of machine learning with ground deformation detection and processing.

The recipient of many awards, including the AGU John Wahr Early Career Award and the Bullerwell Lecture, Juliet is a Professor at the University of Bristol, an associate director of the Cabot Institute and has just commenced an ERC Consolidator Grant 'MAST', Imaging Magmatic Architecture using Strain Tomography.

<https://twitter.com/JulietBiggs>

https://twitter.com/mast_erc

<https://doi.org/10.3390/rs14225703>



Dr Michelle Parks

Icelandic Meteorological Office
Deformation and Lidar Scientist



Michelle completed a PhD on volcano deformation with COMET in 2013. Since 2017, Michelle has worked for Icelandic Met Office, and was most recently involved in deformation mapping and modelling and operational response during the diking events and eruptions at Fagradalsfjall in the Reykjanes Peninsula (2020-22).

See Michelle's recent open access paper on operational monitoring of the 2021 Fagradalsfjall eruption at:

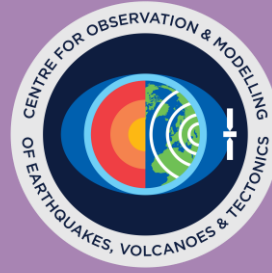
<https://doi.org/10.1007/s11069-022-05798-7>

https://twitter.com/Michelle_Parks1



Dr Qi Ou

University of Leeds, UK
Postdoctoral Researcher



Qi is an excellent scientist who is currently a COMET Research Fellow working at the University of Leeds. Her current work focuses on measuring and mapping deformation and strain using Sentinel-1 InSAR. She has also explored estimating earthquake magnitude using geomorphology, seismology, and geology. At the AGU Fall Meeting 2022, Qi was selected to give an invited talk to introduce the Plate Motion, Continental Deformation, and Interseismic Strain Accumulation sessions.

Qi is a great support to PhD students around her and is always keen to help and give a voice to scientists working around her - epitomised by her rap at the end of her AGU talk that introduced other COMET scientists at the conference! I'm so excited to see what work Qi does next.

https://twitter.com/QiOu_earth

<https://environment.leeds.ac.uk/see/staff/11006/dr-qi-ou>

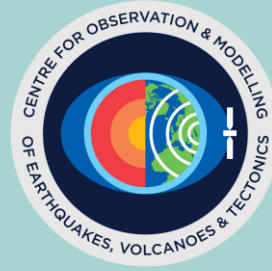
<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2019JB019244>

<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2022JB024176>



Dr Evgenia Ilyinskaya

University of Leeds
Associate Professor

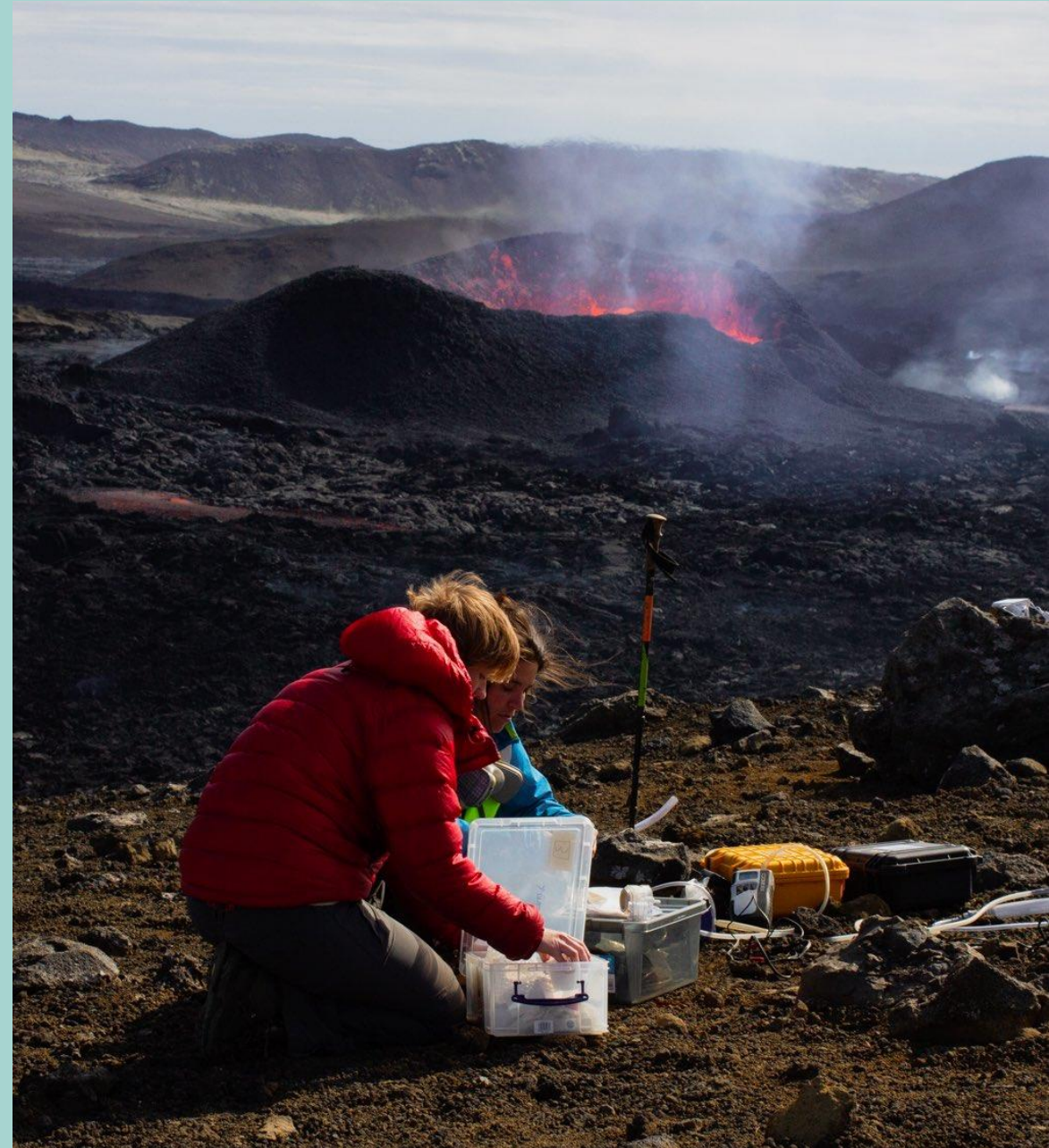


Dr Evgenia Ilyinskaya is a leading global expert on volcanic gases and volatile aerosol emissions, particularly focusing on their impacts to human health and the environment. She is part of many international collaborations, having completed field campaigns across Iceland, Central America, Hawaii, Antarctica, and Japan, and working with a multitude of international partners.

This has recently included helping to coordinate emergency sampling and air quality monitoring campaigns at the Kilauea, Fagradalsfjall and Mauna Loa eruptions in 2021 and 2022, resulting in improved hazard forecasting for the public and several publications. She is also active in bringing up the next generation of volcanologists, having recently taken on two new PhD students and teaching volcanology and applied hazard modules to Undergraduate students.

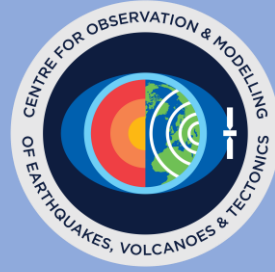
<https://www.nature.com/articles/s43247-021-00146-2>

COMET Webinar: <https://youtu.be/i8j9awXTFQ8>



Dr Cristina Araya

Universidad de Costa Rica
Lecturer



Cristina's COMET PhD used InSAR to understand the tectonic and anthropogenic deformation of Costa Rica. Since then, she has returned to her native Costa Rica to teach the next generation of students and to co-ordinate the National Seismological Network.

Her recent projects include installing a GPS network in the backarc and integrating InSAR with the earthquake monitoring strategy.

Find out more about what Cristina is doing at:

<https://twitter.com/Chanitacr>

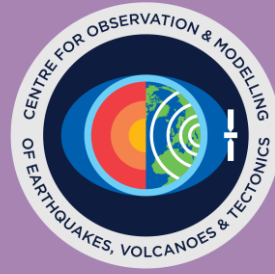
<https://www.youtube.com/watch?v=7lz2UXmBQRl>



Dr Edna Dualeh

University of Bristol

Postdoctoral Researcher



During her PhD Edna worked on using radar amplitude images to quantify volcanic processes. She has shown that you can estimate volcanic topography from a single backscatter image, particularly when there are new features like a growing volcanic dome. This is exciting as radar can see through clouds, and collects data frequently compared to other techniques which can be expensive and dangerous.

Edna was able to combine data from Sentinel-1, Cosmo-SkyMed (CSK) and TerraSAR-X to get a detailed time series showing dome growth in the extrusive eruptive phase at St Vincent (December 2020 - April 2021). The dome volume grew until 7/8 April 2021, when CSK images captured a rapid acceleration in rate. On 9 April 2021, an explosive volcanic eruption occurred. Her work has provided critical information about how an extrusive eruption evolves to being explosive.

<https://www.sciencedirect.com/science/article/pii/S0012821X22006161>

<https://twitter.com/EdnaDualeh>



Dr Isabel Fendley

University of Oxford
Postdoctoral Researcher



Isabel is currently a postdoctoral researcher at the University of Oxford. Prior to her role at Oxford, Isabel was an NSF Graduate Research Fellow at UC Berkeley, where she also completed her PhD.

Isabel uses geochemical (e.g., mercury, carbon, sulphur) and statistical techniques to probe the relationship between volcanic eruptions and environmental change on all timescales: from Large Igneous Province eruptions deep in Earth's geological past, to recent eruptions of the Holocene.

<https://sites.google.com/view/isabel-fendley/home?authuser=0>

<https://twitter.com/izzifen>

<https://www.youtube.com/watch?v=qhmLOZbivUc>

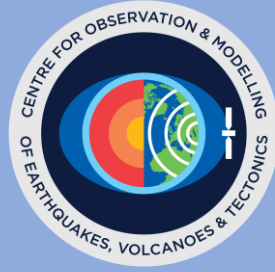
<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2020GC009149>



Manon Carpenter

University of Leeds

PhD student



Manon recently published work studying fault structures of the Malawi Rift, with colleagues from the UK and Malawi.

She looked at a less described aspect of faulting, the growth of normal faults, suggesting mechanisms that control their growth and showing that typical scaling laws may not be applicable in this region.

We're excited to see how Manon's work progresses throughout her PhD project.

<https://www.sciencedirect.com/science/article/pii/S019181412200253X>



Dr Joanna Holmgren

University of Bristol

Postdoctoral Researcher



Dr Joanna Holmgren has achieved an enormous amount over the last two years, from research projects that involved new and international collaborations, via new fieldwork with novel geophysical monitoring techniques, to blogging and impactful hazard research with third sector and industry.

She successfully applied for funding of two projects, one for a geophysical survey of the UKGEOS Glasgow geothermal site and another for improving the seismic ground motion models for the East African Rift. She has also blogged about her fieldwork at UKGEOS Glasgow and has participated in additional fieldwork to monitor geothermal flow testing at the Eden project in Cornwall.

<https://doi.org/10.1785/0320210010>

<https://research-information.bris.ac.uk/en/persons/joanna-m-holmgren/>

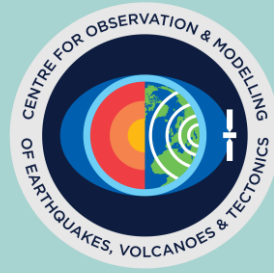
<https://ukgeos.ac.uk/blog/glasgow-fieldwork-investigating-borehole-distributed-acoustic-sensing>



Dr Susanna Ebmeier

University of Leeds

Research Fellow



Dr Susanna Ebmeier uses satellite remote sensing to study different aspects of volcanic activity, including magma storage, edifice growth and volcanic interactions.

She primarily uses SAR (synthetic aperture radar) data, which on a fine scale can be used for studying processes such as mapping lava flows or volcanic landslides, but can also be used on a global scale for volcano monitoring and assessing volcanic hazard.

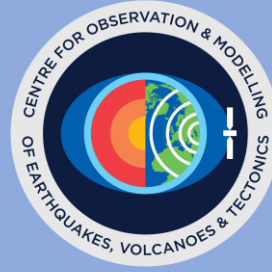
Susi started her academic path with a BSc in Geophysics at the University of Edinburgh followed by a PhD at the University of Oxford and is now a research fellow at the University of Leeds as part of COMET.



<https://environment.leeds.ac.uk/see/staff/1246/dr-susanna-ebmeier>

Dr Ruth Amey

Space Hub Yorkshire *Head of Programmes*



Ruth is Head of Programmes of Space Hub Yorkshire and Manager of the SENSE Centre for Doctoral Training (CDT). She recently published two papers investigating seismic risk for the city of Almaty, Kazakhstan, and Bishkek, Kyrgyzstan, using a combination of earth observation data and scenario modelling in the Global Earthquake Model's OpenQuake engine.

Paper 1: Significant Seismic Risk Potential From Buried Faults Beneath Almaty City, Kazakhstan, Revealed From High-Resolution Satellite DEMs

<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2021EA001664>

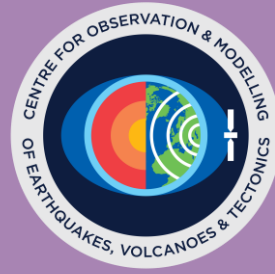
Paper 2: Improving urban seismic risk estimates for Bishkek, Kyrgyzstan, through incorporating recently gained geological knowledge of hazards

<https://link.springer.com/article/10.1007/s11069-022-05678-0>



Prof Sandra Piazolo

University of Leeds
Professor



Sandra has been a focal part of a number of developments at the University of Leeds, bringing together Geosolutions Leeds and the team which hosted TSG 2023, while supervising students and PGRs through their studies and research with infinite enthusiasm. Sandra has also recently received a NERC award to explore the geological signature of Slow Earthquakes at plate boundaries, further expanding her work on deformation processes.

<https://environment.leeds.ac.uk/see/staff/1479/professor-sandra-piazolo>

<https://geosolutions.leeds.ac.uk/>

<https://gtr.ukri.org/projects?ref=NE%2FX012778%2F1>

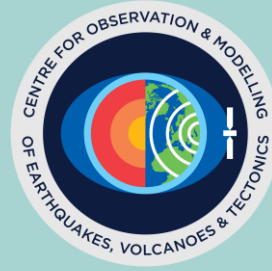
<https://www.researchgate.net/profile/S-Piazolo>



Prof Tamsin Mather

University of Oxford

Professor



Tamsin's main research interests focus on the science behind volcanoes and volcanic behaviour. Her work seeks to better understand volcanoes as: (a) a key planetary scale process throughout geological time, (b) natural hazards, and (c) resources.

Her extensive expertise in volcanology, magmatism, atmospheric chemistry and paleoclimatology/stratigraphy has allowed her to tackle problems ranging from acute volcanic hazards and air pollution events in the present-day, to the role of volcanism in the long-term evolution of our planet.

<https://www.earth.ox.ac.uk/people/mather/>

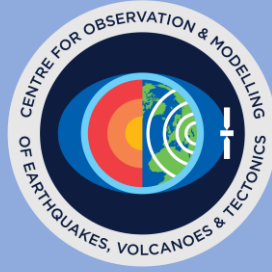
2020 Lecture - <https://www.youtube.com/watch?v=WD7EmV0FI0M&t=692s>



Dr. Galina Kulikova

University of Potsdam

Lecturer



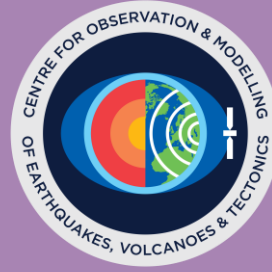
Galina specializes in analysis of paper seismograms from large earthquakes which occurred in the early 20th Century, before the establishment of worldwide seismological networks. Her research has helped uncover details about several large but cryptic earthquakes, including the Mw8.0 1911 Chon Kemin earthquake, Kyrgyzstan.

Source process of the 1911 M8.0 Chon-Kemin earthquake: investigation results by analogue seismic records – <https://doi.org/10.1093/gji/ggv091>



Victoria Purcell

University of Leeds
PhD Student



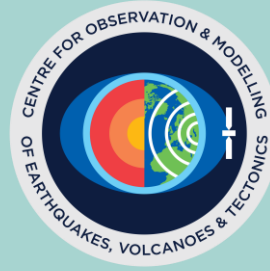
Victoria has recently published work measuring lava flow subsidence at Timanfaya, Lanzarote - the longest-lived lava flow subsidence signal observed to date. Using Sentinel-1 and Envisat, they measured 6 mm/yr of constant subsidence across a 20 km² area, while also performing rigorous analysis to mitigate the impacts of "fading bias" on their results. By modelling this subsidence, they were able to constrain the original thickness of these lava flows, indicating a greater erupted volume than previously believed, with implications for volcanic hazard assessments of Timanfaya.

Nearly Three Centuries of Lava Flow Subsidence at Timanfaya, Lanzarote:
<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2022GC010576>



Gulkaiyr Tilek Kyzy

Institute of Seismology NAS KR
PhD Student



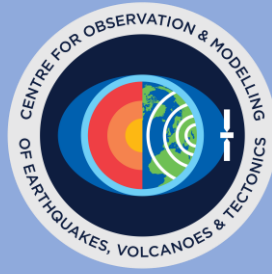
Gulkaiyr's research focuses on seismic hazard and risk to the city of Bishkek, the study of geomorphology, and active faults. She also participates in field campaigns in Kyrgyzstan with researchers from Oxford University and the University of Leeds.

[Amey et al., 2021: Improving urban seismic risk estimates for Bishkek, Kyrgyzstan, through incorporating recently gained geological knowledge of hazards](https://doi.org/10.1007/s11069-022-05678-0)
<https://doi.org/10.1007/s11069-022-05678-0>



Anna Brookfield

University of Oxford
PhD Student



Anna's research interests are in monitoring active volcanoes, and how we can integrate different types of data to improve forecasting. She is particularly interested in what controls eruption style.

Her current work focusses on investigating the build-up of overpressure within volcanoes, using experimental petrology and satellite monitoring techniques.

Anna is also involved in the Oxford SPARKS project, which aims to share a wide diversity of scientific content, focusing not only on 'pure science' but also the ethics of science, history of science, and even 'how science works' with a wide audience.



Dr. Aisling O'Kane

GNS/Uni of Canterbury
Post-doc



Aisling's research has produced major conceptual advances in how the shape of foreland basins, and the faults along their margins, control the ground shaking within them caused by earthquakes.

Her research is particularly novel in that it provides new conceptual links between studies of continental tectonics and mountain building with seismic hazard, and will therefore shape the trajectory of research in these two fields.

O'Kane et al., 2021 – <https://doi.org/10.1093/gji/ggac303>

