

# Girls into Geoscience Workshops 2018

Please rank your top 4 workshops, we will aim to allocate you your top choices of workshop, however this will be on a first comes first served basis.

Many thanks!

## **Workshop 1: Discovering the rocks beneath the seafloor: Celebrating 50 years of Scientific Ocean Drilling – Dr Michelle Harris**

In this session you will be introduced to the history of scientific ocean drilling and one of the highlighted achievements of this program – the sampling of an intact section of ocean crust. You will be introduced to some of the key skills used by geologists to describe igneous rocks, and use these skills to reconstruct a profile through the ocean crust using a variety of samples from the seafloor. We will also have one of the core replicas provided by IODP to demonstrate how scientists use these cores to study the rocks beneath the seafloor.

## **Workshop 2: Microfossils and Climate – Dr Jodie Fisher**

Come and explore how microscopic shells are used to reconstruct past environments and changes in global climate. Get hands-on experience of examining deep-sea sediments using microscopes and use these amazing microfossils to reconstruct 100,000 years of climate change in just 30 minutes!

## **Workshop 3: Reconstructing past glaciation from the seafloor – Dr Caroline Clason**

In this workshop we will be looking at how glaciologists can use state-of-the-art imaging of the seafloor to provide an insight into hidden past glacial landscapes. We will be identifying glacial landforms from seafloor bathymetry data to reconstruct the flow of a palaeo ice stream, and using our observations to explore the reasons behind the rapid retreat of ice in this region. Finally, we'll be thinking about how reconstructions of past glacial activity can help glaciologists to understand the response of present day ice sheets to changes in climate.

## **Workshop 4: Investigating Earthquake Behaviour – Dr Lucy Campbell**

Devastating earthquakes require rapid responses from emergency services and governments - but also from geoscientists. How big was it? Where is the epicentre? What kind of plate tectonics caused it? Why is one city much more damaged than the rest? All these questions might be posed by a news reporter to you, a geologist, just hours after the event. In this session, we will answer these questions by analysing the information that would be available after a real earthquake event.

## **Workshop 5: Amazing, dangerous volcanoes – Dr Irene Manzella**

Volcanoes can trigger different kind of dangerous phenomena from tephra dispersal to lahars, the most devastating one. In this workshop we will have an overview of the possible risk of living close to a volcano, and of the effect an eruption could have at a local and global scale. We will analyse some products of a volcanic eruption, and will a small homemade eruption to see which process are important in the physics of such a phenomena.

## **Workshop 6: Planetary geology & Interplanetary Fieldwork – Dr Natasha Stephen**

Geologists don't just study the Earth! There are other planets and bodies throughout our Solar System that share geological similarities to Earth as well as some very dramatic differences. Volcanoes on Mars are bigger than Mt Everest, they're much hotter on Venus and even frozen on Jupiter's moons! Marsquakes are a real thing and we really do have rovers, landers and satellites on planets, moons, comets and asteroids, as well as space rocks here on Earth to study. Join us on an interplanetary fieldtrip as we explore the geology of the Solar System from the luxury of a classroom – no space travel required!

## **Workshop 7: Reconstructing ancient Earthquake events – Prof Anne Mather**

In this session we will examine how we can use satellite imagery to read the geomorphology of the Earth's surface. We will use a virtual globe (Google Earth) to visit some virtual field sites to reconstruct the frequency of large earthquakes in some of the most active fault zones on Earth over long (10,000 to million year) time-scales (and all in less than an hour!).