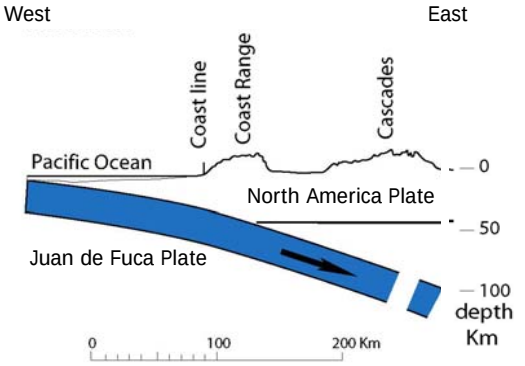
Why Oregon and Washington?

Researchers are interested in the structure beneath Oregon and Washington because it is important to our understanding of plate tectonics. Off the Pacific coast, a tectonic plate (the Juan de Fuca plate) is sinking beneath North America. Earth scientists think the sunken plate may still be beneath Oregon and Washington so we will use the recorded earthquakes to see where the plate is going and how it might be interacting with the North American plate. This project builds on two experiments that used similar instruments in this region over the past 10 years.



The diagram above shows the sinking Juan de Fuca plate beneath the Coastal Ranges and the Cascades. With this project, we will be studying the interaction between these plates.

Thank you!

We would like to thank all those real faces helping us with this project. Whether it is allowing us to locate a station on your land, assisting in the installation, or watching over the equipment for the duration of the experiment – *thank you!* It would not be possible to learn more about the Earth without your help.

If you have any questions or comments about the project please contact:

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FACES

Flex-array Along Cascadia Experiment for Segmentation

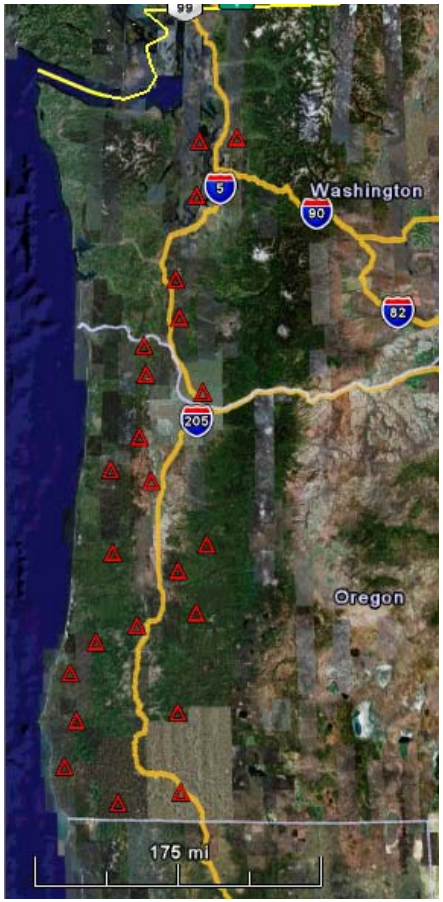
The Flex-array Along Cascadia Experiment for Segmentation (FACES) is a scientific project designed to investigate the structure of the Earth beneath Oregon and Washington. Funding for this project is provided by the National Science Foundation as part of the EarthScope initiative to study the North American continent (earthscope.org). This work is being conducted by Miami University of Ohio and the University of California-Berkeley.

MIAMI UNIVERSITY
OXFORD OHIO

UC Berkeley

Where is this project happening?

This project is installing 23 seismic stations for two years across Oregon and Washington (red triangles on map). The stations are passive and simply record ground vibrations. They do not generate any signals or vibrations. They are sensitive enough record earthquakes from the other side of the world. By looking at the recordings of global earthquakes, researchers can study the structure of the Earth to several hundred miles below the surface.



What does a seismic station look like?

A seismic station includes a seismometer and a power supply. The seismometer is placed in a large plastic bucket about 1 foot wide and 3 feet deep that we sink into the ground using hand tools. The picture to the right shows a blue bucket being prepared for the seismometer. By placing it in the ground it can detect the tiny vibrations from the earthquakes occurring every day that are too small for humans to feel. On the surface we install a solar panel to provide power and a box to contain batteries (see below). To protect the equipment from curious animals we often surround the station with a wire fence.