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# THE OXFORD ITALIAN ASSOCIATION

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## TOIA FUNDRAISING EVENT: EARTHQUAKE RELIEF FOR CENTRAL ITALY

LECTURE BY PROFESSOR RICHARD WALKER - 7.30 P.M. TUESDAY 11TH OCTOBER 2016

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Earthquakes are an ever-present hazard across much of Italy, with destructive events occurring from the Alps in the north to the island of Sicily in the south. The majority of recent damaging *terremoti* have been in the Apennine chain, which forms the spine of the Italian peninsula. The most recent of these earthquakes occurred near Amatrice in 2016, and the previous was in L'Aquila in 2009, both of which caused severe damage and loss of life in the local towns and villages.

In this lecture, we will explore the scientific context of the earthquakes in Italy, with particular reference to the 2009 and 2016 earthquakes. We will describe the range of methods that scientists use to study recent earthquakes, and the ways in which this information can be used to inform for the future. In the days following the Amatrice disaster, scientists were able to use satellite images to identify the causative geological fault, and to produce maps of changes in the topography caused by slip on the fault.

Often our attempts to understand the distribution of earthquakes take us back into history, and we will examine the historical records of tremors in the 2009 and 2016 epicentral regions. To produce a more complete record we are sometimes forced even further back into pre-history, such that we are gradually able to appreciate how the Apennines have grown through many earthquakes over many thousands and millions of years, and how the landscape retains clues that enable to identify active faults that may fail in future.

Active faults constitute an ever-present hazard, and even if these sources of hazard can be identified, the populations and infrastructure are still at risk, particularly given the widespread historic building



stock within the mountainous parts of Italy, providing a challenge for mitigation efforts.

**Richard Walker** is Professor in the Department of Earth Sciences, Oxford. He has more than 15 years of research experience in the geology of earthquakes in China, Greece, Iran, Kazakhstan, Kyrgyzstan and Mongolia. His research combines remote sensing, detailed field investigation, earthquake studies, and Quaternary dating methods to quantify the distribution, rates, and evolution of active faulting within deforming parts of the continents. Since 2012, he has been heavily involved in the 'Earthquakes without Frontiers' partnership for enhancing resilience to earthquakes. He is also Deputy Director of the UK COMET Institute, which is one of the leading worldwide centres of excellence in the study of earthquakes, volcanoes, and tectonics.

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**① Earthquake Relief for Central Italy,** Earth Sciences Lecture Theatre, The Department of Earth Sciences, University of Oxford, South Parks Road, Oxford 7.30 p.m. on Tuesday, 11th October, 2016.

**➔ All are welcome to this fundraising event. All proceeds will go to the Italian Red Cross. Please make a discretionary donation at the door and give generously. If you are unable to attend and would like to donate online, please visit the following site:**

[www.redcross.org.uk/Donate-Now/Make-a-single-donation/Italy-Earthquake-Appeal/Italy-Earthquake-Appeal-hero](http://www.redcross.org.uk/Donate-Now/Make-a-single-donation/Italy-Earthquake-Appeal/Italy-Earthquake-Appeal-hero)