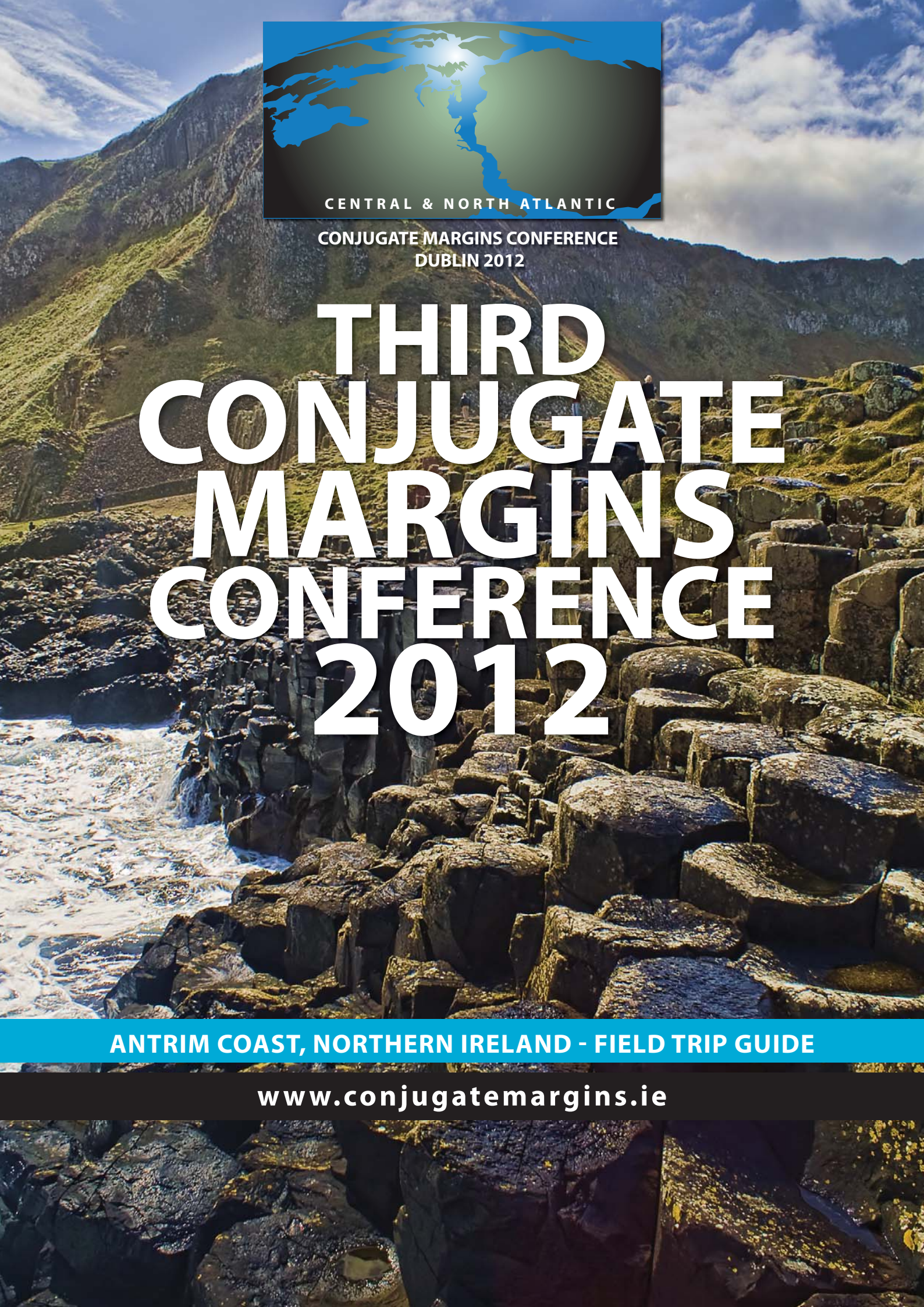


CONJUGATE MARGINS CONFERENCE
DUBLIN 2012

THIRD CONJUGATE MARGINS CONFERENCE 2012

ANTRIM COAST, NORTHERN IRELAND - FIELD TRIP GUIDE

www.conjugatemargins.ie

Field Trip - Antrim Coast, Northern Ireland

Synopsis

This 4 day field trip will encompass a selection of Northern Irelands most iconic and famous geological locations including the Giant's Causeway UNESCO World Heritage Site, Glens of Antrim and Antrim Plateau. The coastal and plateau landscapes are breath-takingly beautiful, wild and thoroughly memorable. We will visit rocks from the Triassic to the Palaeogene Periods, but emphasis will be given to Palaeogene volcanic rocks and events that came about as a consequence of the opening of the North Atlantic Ocean. This volcanic magmatism, and associated tectonics, manifests itself in flood basalt sequences, dyke swarms and sills, all of which have ramifications for hydrocarbon reservoir integrity, compartmentalisation and even formation.

Leader

Dr Alastair Ruffell, School of Geography, Archaeology and Palaeoecology, Queen's University Belfast
Dr Mark Cooper, Geological Survey of Northern Ireland

Location

North and North-East Ireland, especially Antrim Coast. The Giant’s Causeway and Causeway Coast is a UNESCO World Heritage Site.

Geology

The oldest rocks in the area are restricted to a few places along the coast such as Portrush and White Park Bay. These are of Jurassic age (190-135 million years ago) and consist of sediments laid down in the warm waters of those times. Sub-tropical oceans were still a feature in the succeeding Cretaceous period (135-65 million years ago). The white limestone or chalk was formed from the remains of plants and animals. They contain fossil evidence of the animals which inhabited these ancient seas. By the end of the Cretaceous period, relative sea levels had fallen leaving dry land. The brilliant whiteness of the chalk contrasts with the more recent basalts, as does their modes of origin.

Volcanic and fissure eruptions spewing out magma and ash were related to the opening of the modern Atlantic Ocean during the Tertiary period (62-2 million years ago). The basalts are mainly 65-60 million years old. The Lower and Upper Basalts represent the more prolonged periods of eruption, with successive flows increasing the thickness of basalts, the resultant rock formed by the cooling lavas. The intervening Middle Basalts were formed in a similar manner but during this period violent

volcanic eruptions were more frequent as at Carrick-a-Rede and Kinbane.

Eruptions were not continuous and during quiet periods weathering of the basalt surface occurred producing tropical soils. One outcome of an extended period of such weathering was the major inter-basaltic horizons to be found between the Upper, Middle and Lower Basalts. In places this weathering progressed to the point where enriched iron and aluminium ores formed and these have been commercially exploited in the past. Partially rotted vegetation also accumulated in places forming lignite as at Ballintoy.

Outline Itinerary

Saturday 18th - Alastair Ruffell and Mike Simms

- 09.00 depart TCD Dublin
- 12.00 Lunch in Lisburn (Premier Inn)
- 13.00 Belshaw's Quarry - Cretaceous chalk, the enigmatic Palaeogene Clay-with-Flints and Palaeogene Antim Lava Group and dykes
- 15.00 Geological exhibition in Ulster Museum
- 18.00 hotel in Belfast (Holiday Inn, Ormeau Rd, Belfast) (Hotel Front Desk: +44-871-9429005). Evening of 'Craic'

Sunday 19th - Mark Cooper , Ian Meighan and Mike Simms

- 08.30 depart Belfast.
- 10.00 - 12.00 Giant's Causeway - Palaeogene columnar basalts
- 12.00 - 14.00 Lunch and a look at new Causeway visitors centre
- 14.00 - 16.00 Carrick-e-Rade Rope Bridge - Palaeogene volcanics
- 16.00 - 18.00 Ballintoy - White Park Bay - Jurassic fossils
- 18.00 to hotel in Portrush (Ramada **Info@ramadaportrush.com**)

Monday 20th - Mark Cooper , Ian Meighan and Mike Simms

- 09.00 - 12.00 Palaeogene Portrush Sill and Jurassic hornfels
- 12.00 - 13.00 Lunch in Ramore Wine Bar (**www.ramorerestaurant.com/ramore-wine-bar.htm**)
- 13.00 - 15.00 White Rocks Cretaceous chalk and Palaeogene volcanic vents
- 15.00 - 18.00 Antrim Plateau and Glens of Antrim Drive to Carnlough and then Palaeogene Slemish Mountain volcanic plug

• 18.00 hotel in Belfast (Holiday Inn, Ormeau Rd, Belfast) (Hotel Front Desk: +44-871-9429005)

Tuesday 21st - Mark Cooper and Jenny McKinley

• 09.00 - 13.00 Scrabo Quarry - Triassic sandstones and Palaeogene sills and dykes.

• 13.00 Lunch in Scrabo Golf Club

• 14.00 depart for Dublin

• 16.00 arrive TCD Dublin

Cost

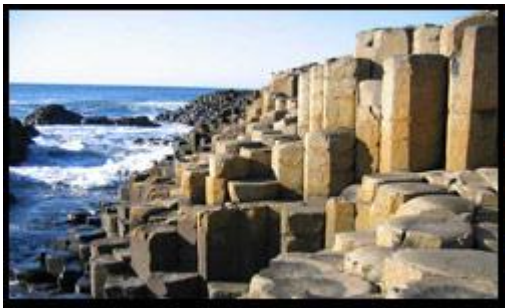
Single	Room	-	€600
Sharing	Twin Room	-	€480
*Student	Sharing Twin	-	€240

**Student refers to MSc and PhD Researchers who have papers or posters accepted by the conference committee.*

Cost includes coach pickup from Trinity College Dublin (TCD), travel to location, bed and breakfast accommodation for three nights and return by coach to TCD. The cost also includes the currency conversion rate to Euros. Cost does not include lunch, dinner or any gratuities. Each attendee will get a goody bag with the Tellus Border information and a copy of the Classic Field Geology of the North of Ireland as their guide.

Numbers

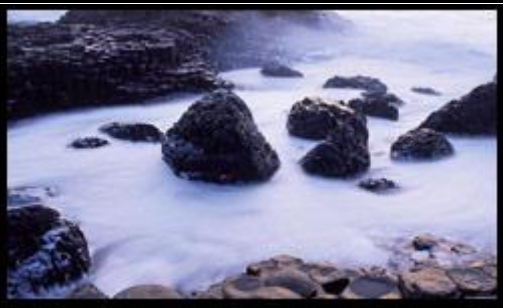
Numbers are initially limited to 10 delegates plus the organisers. The organisers reserve the right to cancel the trip if less than 6 paid delegates have booked.



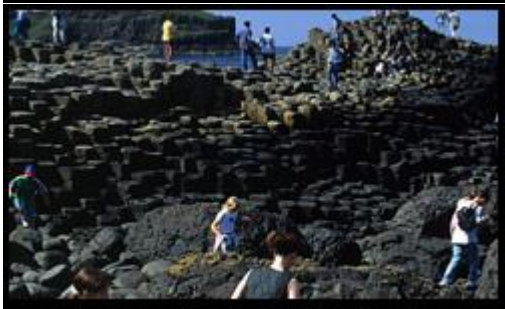
Giant's Causeway

Giant's Causeway

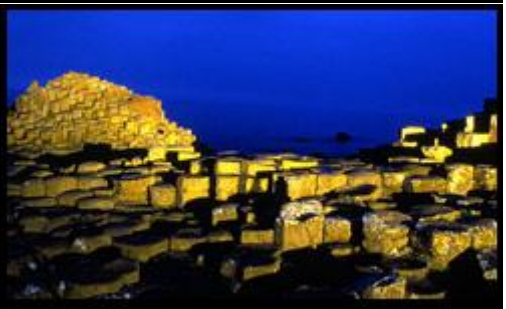
Giant's Causeway



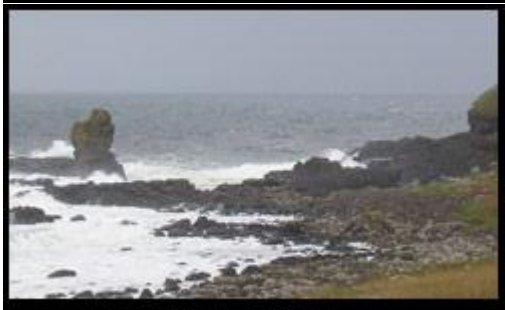
Giant's Causeway



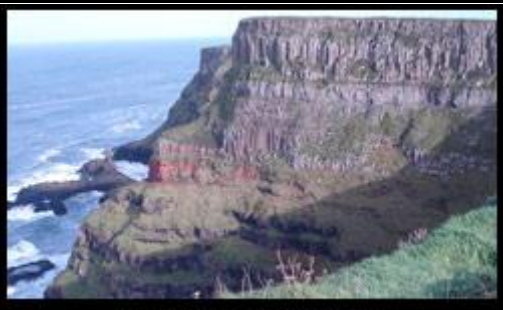
Giant's Causeway



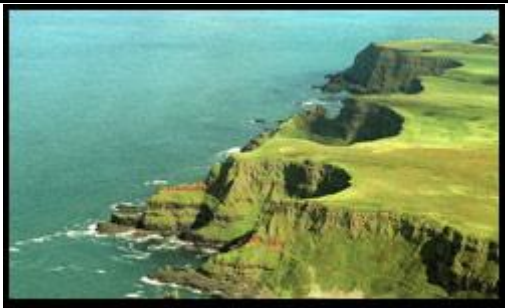
Giant's Causeway



Giant's Causeway



Giant's Causeway Coastline



Giant's Causeway Coastline

www.conjugatemargins.ie