



**Earth Science Teachers' Association
50th Anniversary Annual Course and Conference
29th September – 1st October 2017**



**School of Geography, Geology and the Environment
Keele University**

Friday 29th September - Chancellor's Building				
2.00 onwards	Registration - Refreshments			
2.30 – 5.30	Teacher training for the Practical Endorsement – OCR – Chae Cruickshank			
2.30 – 5.30	Teacher training for the Practical Endorsement – WJEC Eduqas – Pete Loader and Brian Harris			
3.00 – 5.00	Tours around Keele Campus – Ian Stimpson			
6.00 – 7.00	Buffet supper			
6.50 – 7.00	Welcome by Head of School, Prof. Chris Fogwill			
7.00 – 7.45	Keynote presentation: Unstable ground? An engineering geologist's view of hazards and risks - David Shilston, ESTA President			
8.00 onwards	Drinks reception			
Saturday 30th September - Chancellor's Building				
8.15 – 9.00	Registration - Refreshments			
9.00 – 12.30	Primary workshop - Tracy Atkinson (Separate booking required) Minerals & Rocks Soils & Erosion Water Fossils & Evolution Summary & Freebies			
9.00 – 12.30	Secondary workshops			
9.00 – 10.00	<table border="0" style="width:100%"> <tr> <td style="width:33%"> 1 Teacher at Sea <i>Angela Bentley, Aquinas College Chris MacLeod, Cardiff University Roger Searle, Durham University</i> </td> <td style="width:33%"> 2 Mission to Mars <i>Jen Brooke and Sean Doherty GeoBus</i> </td> <td style="width:33%"> 3 Plate Tectonics <i>Ian Stimpson, Keele University</i> </td> </tr> </table>	1 Teacher at Sea <i>Angela Bentley, Aquinas College Chris MacLeod, Cardiff University Roger Searle, Durham University</i>	2 Mission to Mars <i>Jen Brooke and Sean Doherty GeoBus</i>	3 Plate Tectonics <i>Ian Stimpson, Keele University</i>
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12.30 – 1.30	Lunch (Chancellor's Building)			
1.30 – 2.45	Keynote lecture: ESTA at 50: A successful organisation - fit for the future - Chris King, Peter Kennett and Annette Thomas			
2.45 – 3.15	ESTA EGM and AGM			
3.15 – 3.30	Refreshments			
3.30 – 5.30	Bring and Share session- Chris King			
7.00 – 11.00	Conference Dinner (Keele Hall)			
Sunday 1st October				
9.00 departure	See individual fieldwork visits for details.			

Main sponsors



Sunday 1st October

Fieldwork Visits

1. David Thompson's Darwin Trail (half day)
Chris King – Keele University/ESTA

This fieldwork visit will reprise David Thompson's field excursion following Charles Darwin's footsteps in North Staffordshire between c.1817 and 1843 and will visit places which have proved to be seminal in the development of ideas of evolution, origin of soil, the Tertiary geological history of the area and "Darwin's Dykes".

There is limited amount of walking over uneven terrain so stout shoes and outdoor clothing are needed, and some roadside geology so a high-vis jacket is advised. Packed lunch will be provided.

Departure: Holiday Inn 9.00, Keele University 9.15

Return: Keele University 1.00, Holiday Inn 1.15, Stoke Railway Station 1.30

2. Ecton Mine: Salt's Levels

Peter Kennett and Steve Davies – Ecton Tutor & Ralf Halama – Apes Tor & Tim Coleman

The copper and lead deposits on Ecton Hill were worked from Bronze Age times, until 1891. The visit includes a tour of Salt's Level, an adit about 300m long inside Ecton Hill. Apes Tor displays impressive examples of structural folding in Carboniferous Limestone and has associated KS4 activities through Earth Science On-Site. Assess the potential of the site as a venue for bringing your own A Level or GCSE Geology groups.

There is limited amount of walking over uneven terrain so stout shoes and outdoor clothing are needed, and some roadside geology so a high-vis jacket is advised. Packed lunch will be provided.

Departure: Keele University 9.00, Holiday Inn 9.15

Return: Stoke Railway Station 4.00, Holiday Inn 4.15, Keele University 4.30

3. Hulme Quarry, Park Hall (half day)

Dr Stuart Clarke – Keele University

Hulme Quarry in Park Hall Country Park is a SSSI that exposes the Triassic Kidderminster Formation pebble beds. Through Earth Science On-Site there are activities here for students at KS2, KS3 and KS4. The nature and origin of the rocks will be discussed as well as the provenance of the pebbles.

There is limited amount of walking over uneven terrain so stout shoes and outdoor clothing are needed, and some quarry faces so a hard-hat is advised. Packed lunch will be provided.

Departure: Keele University 9.00, Holiday Inn 9.15

Return: Stoke Railway Station 12.30, Holiday Inn 12.45, Keele University 1.00

4. Brown End Quarry & Froghall Wharf Geoconservation (optional half day)

Ian Stimpson – Keele University

Brown End Quarry, near Waterhouses in Staffordshire is a SSSI that exposes the lower part of the Carboniferous Limestone succession. Near-vertically bedded Milldale and Hopedale Limestones are exposed with recent research delineating the Tournaisian-Visean boundary. In addition to the geology, the practical aspects of geoconservation will be discussed. The afternoon will follow a 2km section of the Churnet Valley Geotrail, discussing the geology and geologically related industrial archaeology of the area around Froghall Wharf.

There is about 2km of walking on footpaths over uneven terrain so stout shoes and outdoor clothing are advised. Packed lunch will be provided.

Departure: Keele University 9.00, Holiday Inn 9.15

Return: Stoke Railway Station 4.30, Holiday Inn 4.45, Keele University 5.00

If using own transport, then the Brown End Quarry visit will finish around 12:00 if you would like to make this a half-day trip.