

Earth Science Teachers' Association

Earth Science Teachers' Association Annual Course and Conference – 'From field to classroom' 27th – 29th September 2019

Lapworth Museum, GEES, University of Birmingham



Earth Science Teachers' Association
SUPPORTING EARTH SCIENCE TEACHING THROUGH GEOLOGY, GEOGRAPHY & THE SCIENCES



UNIVERSITY OF
BIRMINGHAM

SCHOOL OF GEOGRAPHY,
EARTH AND ENVIRONMENTAL
SCIENCES



Friday September 27 th			
1.00 onwards	Registration - tea and coffee	Lapworth Museum	
2.00	Campus Tours	Lapworth Museum	
3.00 – 5.30	EduQAS and OCR CPD	Palaeo Lab (EduQAS); Earth Imaging Lab (OCR)	
3.00 – 5.30	Behind the scenes tours of the Lapworth Museum (3pm/4pm)	Lapworth Museum	
6.00 – 7.00	Welcome by Prof. William Bloss & Keynote presentation by Prof. Alice Roberts 'Ice Ages and Pleistocene megafauna'	WG5 Aston Webb Building	
7.00 – 9.00	Drinks reception & buffet supper	Lapworth Museum	
Saturday September 28 th			
8.15 – 9.00	Registration - tea and coffee	Lapworth Museum	
9.00 – 12.30	Secondary workshops		
9.00 – 10.00	1 <i>3D visualisation of fossils</i> <i>Andy Jones, Stephan Lautenschlager, Sam Giles</i> (Earth Imaging Lab)	2 <i>Using museum collections in supporting A-level geology</i> <i>Aerona Moore</i> (Lapworth Education Room)	3 <i>New concepts in seafloor spreading</i> <i>Prof. Tim Reston</i> (Palaeo Lab)
10.00 – 11.00	4 <i>Exploring controls on volcanic processes</i> <i>Dr Seb Watt</i> (Palaeo Lab)	5 <i>Mineral Extraction Mock Inquiry</i> <i>Dr Paul Anderson</i> (Earth Imaging Lab)	6 <i>Using geomodels for exploring sedimentary surface processes</i> <i>Dr James Wheeley</i> (CTL)
11.00 – 11.30	Tea and coffee	Lapworth Museum	
11.30 – 12.30	7 <i>Micropalaeontology</i> <i>Dr Ian Boomer/ Dr Tom Dunkley Jones</i> (MSc room)	8 <i>Structural geology and field MOVE</i> <i>Dr Carl Stevenson</i> (Earth Imaging Lab)	9 <i>Oxygen isotopes as a geological thermometer</i> <i>Dr Sarah Greene/ Dr Kirsty Edgar</i> (Palaeo Lab)
12.30 – 1.30	Lunch	Lapworth Museum	
1.30 – 2.15	Keynote Lecture: Dr Will Tattersdill 'Geographies of Popular Fiction'	WG5 Aston Webb Building	
2.15 – 2.30	ESTA AGM	WG5 Aston Webb Building	
2.30 – 2.45	Tea and coffee	Lapworth Museum	
2.45 – 5.30	Bring and Share session: Chris King	WG5 Aston Webb Building	
7:00 – 10:00	Conference Dinner	Lapworth Museum	

PTO for Sunday field visits

Sunday 29th September
Field visits

1. The Building Stones of Birmingham - from the Town Hall to Grand Central

Three building stone trails in Birmingham have been compiled (by Ruth Siddall of UCL) on behalf of the Black Country Geological Society. This excursion will take in parts of Trails 1 and 3, starting in the Victorian Civic Centre, and finishing in Grand Central to take a look at some fabulous geology in the new retail heart of Birmingham. In the course of this short walk Birmingham's buildings will reveal all the major rock types, and will take us on a journey from the Archaean to the Pleistocene. There are pdfs and a series of mobile-friendly web pages for each of the trails. These can all be found by going to: <http://bcgs.info/pub/local-geology/building-stone-trails/>. The web pages have maps and additional photos, plus further information.

Logistics: meet at the Victoria Statue in Victoria Square at 10.20am for a 10.30am start. Lunch time is estimated to be 12.30pm at Cathedral Square where there are plenty of benches and eateries available, regroup at 1.15pm for afternoon walk finishing at Grand Central (Birmingham's New Street station is part of Grand Central) for 3.15pm.

Leader: Julie Schroder (Black Country Geological Society). **Numbers:** 20 max

2. Environmental Interpretation and Structural Analysis of the Geology of the Lickey Hills, Birmingham

This field visit will be run as a course with the participants carrying out the same work that students would on a visit. It will be ideally suited to those who might use this area for fieldwork in the future, but also for those who would like some pointers in planning skills-oriented field courses. The aims of the course are to identify the Lower Palaeozoic lithological units in the Lickey Hills, interpret their environments of deposition, establish their age relationships, and to establish the structural history of the Lickey Hills. The course will provide opportunities to develop the following specified practical (SP) skills:

• 5a Describe & interpret sedimentary rocks in hand specimen • 5b Describe and interpret sedimentary rocks in exposures • 7 Interpret sedimentary rocks from photomicrographs • 12 Locate the position of geological features on a base map • 13 Identify locations using 6-figure grid references • 14 Field sketches (including folds, faults, thrusts, an unconformity and 'neptunian dykes') • 15 Measurement of strike & dip.

Logistics: Coach will depart from outside the Lapworth Museum at 9.00 and return at 15.30. Members will get the most out of the day if they bring standard field equipment: field notebook, clipboard, compass-clinometer (these can be borrowed) and handlens. Participants will each get a copy of the course guide, field slip and O.S. extract, as well as a copy of *A Pocket Guide to Geological Field Recording* to complete the resource package. The route includes rough country park paths uneven ground and loose rock underfoot. Packed lunches provided.

For more information: <http://ehtchampions.org.uk/ch/worcestershire-sites/lickey-hills-quarries/>

Leader: Alan Richardson (external subject expert consultant for geology with Ofqual).

Numbers: 15 max

3. The limestone geology and fossils of the Black Country

This visit will include a canal boat trip (fee payable) into the limestone Caverns (Dudley Canal Trust <http://dudleycanaltrust.org.uk/>), and a visit to Wren's Nest National Nature Reserve <https://www.dudley.gov.uk/residents/environment/countryside-in-dudley/nature-reserves/wrens-nest-national-nature-reserve/geology-of-wrens-nest-national-nature-reserve/> Packed lunches provided.

Logistics: Coach will depart from outside the Lapworth Museum at 9.00 and return (via Sandwell and Dudley/New Street Station) at ~16.00.

Leader: Robyn Amos **Numbers:** 50 max

4. Shropshire's Geology Highlights

This field visit will investigate a number of classic geologic teaching locations within the Shropshire Hills (Ironbridge Gorge, the Wrekin and Wenlock Edge). Perhaps surprisingly Shropshire boasts the UK's first commercial oil strike (c.1787, the Tar Tunnel, Ironbridge) and we will loosely base the day around searching for the likely source of the oil. We will see rocks of Precambrian to Carboniferous age and will investigate how plate tectonics and sea level change controlled the rock record and the eventual accumulation of oil. The aims of this trip are to provide an overview of the geologic history of the Shropshire Hills and highlight how this small area can be used to demonstrate global processes and aspects of petroleum geology.

Logistics: Coach will depart from outside the Lapworth Museum at 9am and return at 4pm (via New Street Station). It is recommended that participants bring standard field equipment: field notebook and hand lens, plus waterproofs. Stout-footwear is required (walking boots) and hardhats and high-vis tops will be provided. Packed lunches provided.

Leaders: Dr David Ray (Honorary Research Fellow, University of Birmingham) and Jamie Higon (Industry based structural geologist and stratigrapher). **Numbers:** 15 max