William Smith Virtual Meeting 19-21 October 2021

Geological Mapping - of our world and others

Draft Programme

Day 1	
09.00	Welcome
	Session 1 – Setting the scene, tectonics towards historical perspectives
09.15	Introduction: **John Dewey**
09.45	Mapping as a key to understanding the evolution of major strike-slip faults during Cenozoic hyper-oblique collision between India and SE Asia. **Christopher Morley (PTT Exploration)**
10:00	Geological mapping of Southern Thailand in the 1960s that led to the proposal that SE Asia had its origins in Gondwana: a historical review. **Michael Ridd**
10:15	The tectonic evolution of Anglesey and adjacent mainland North Wales: accretion of peri-Gondwanan elements in the UK sector of Iapetus. **A.G Leslie (BGS)**
10:30	Discussion
10:45	BREAK
	Session 2 – Surveys 1
11:00	Approaches and legacy of geological mapping by William Smith – a dip into history. **Owen Green (University of Oxford)**

11:15	Developing the ground model and updating the geological map for the A417 'Missing Link', Cotswolds, UK. **Lee Taylor (Arup)**
11:30	Lithological map of Metropolitan France 1/50 000. **Anne Bialkowski (BRGM)**
11:45	Multiscale geological mapping of the autochthonous regolith in Metropolitan France: history, issues and methods. **Florence Quesnel (BRGM)**
12:00	A new geological data model for the Geological Survey of Austria. **Mathias Steinbichler (Geological Survey of Austria)**
12:!5	NGRM: Climate™ - Mapping the impact of climate change on ground hazards. **Timothy Farewell (Terrafirma)**
12:30	Discussion
12:45	Lunch break and map videos
	Session 3 – Surveys 2
14:00	**KEYNOTE** **The future of Geospatial information for the UK.** **Karen Hanghøj (BGS)**
14:30	GMAP: Planetary Geologic Mapping within the Europlanet Research Infrastructure. **Angelo Pio Rossi (Jacobs University)**
14:45	Geological mapping and the making of Europe: Inventing a common subsurface? **Leo Corbel (SAGE Research Unit)**
15:00	The International Quaternary Map of Europe: Cooperation without political boundaries. **Kristine Asch, (BGR)**
15:15	Colonial cartography

	Apoorva Tadepalli
15:30	Discussion
15:45	BREAK
	Session 4 – Towards the Arctic
16:00	**KEYNOTE** **Rocks Are Us: 179 years of geological mapping, technological innovation and scientific advancement by the Geological Survey of Canada** **Marc St Onge - (Geological Survey of Canada)**
16:30	Modern 1:100 000 scale mapping of northern Baffin Island, Nunavut, Canada: structural insights on the evolution of the Rae Craton and NE Trans-Hudson Orogen. **Benoit Saumur, (Université du Québec)**
16:45	Mapping the oblique - looking back at the last 50 years of photogeological map making in Greenland. **Erik Vest Sørensen, (Geological Survey of Denmark and Greenland)**
17:00	Standing on the shoulders of giants: using historical mapping, reconnaissance fieldwork and photogrammetry to create modern, low-cost geological maps of the Prøven Igneous Complex, West Greenland. **Ken McCaffrey, (Durham University)**
17:15	Mega-fold interference patterns in West Greenland: mapping from air and ground of the structural architecture of deep Archean crust. **Brian Windley, (The University of Leicester)**
17:30	Closing discussion
18:00	Close
Day 2	
	Session 5 - Tectonics
09.15	The myth of the Highland Cretaceous revealed by the art of palaeogeographic mapping - a synthesis of 250 years of collaborative science. **David Macdonald, (University of Aberdeen)**

09.30	Geological map of the Rinkian fold and thrust belt (Palaeoproterozoic, West Greenland). **Pierpaolo Guarnieri,(GEUS)**
09.45	Mapping of superimposed faulting in poly-orogenic contexts. Variscan and Alpine faults in Duje Valley (Picos de Europa, Cantabrian Mountains, NW Spain). **Brais Gonzalo-Guerra, (IGME, CSIC)**
10.00	From ophiolite obduction to post orogenic extension: Using mapping to understand the Aegean Orogeny and metamorphic core complexes. **Thomas Lamont, (University of Bristol)**
10.15	A new generation of geological maps: the event-geological maps. Example of the Pyrenees orogen (France). **Maxime Padel, (BRGM)**
10:30	Geologic mapping of the Northern Apennines nappe stack on the Isle of Elba (Italy): a correlation between surface geology and exploration boreholes **Samuele Papeschi, (Kochi X-Star)**
10:45	Discussion
11:00	BREAK
	Session 6 – Structural geology and fault mapping – the link to planets
11:15	Mapping deformation: the map representation of geological structure. **Paul Markwick, (Knowing Earth)**
11:30	The Austrian national fault database and the pan-European HIKE fault database: The interplay of structured data with Linked Data – challenges and opportunities. **Esther Hintersberger, (GBA)**
11:45	A multiscale characterization of fault and fracture networks in granite: outcrop analogues for deep geoenergy applications. **Gianluca Amicarelli, (Newcastle University)**
12:00	Mapping fractured craters and chaos on the Moon and Mars. **Erica Luzzi, (Jacobs University)**
12:15	**KEYNOTE Team-based, bespoke, and machine learning: different ways to map Mars from remote sensing data.** **Matt Balme, (The Open University)**

12:45	Discussion
13:00	Lunch break and map videos
	Session 7 - Planetary 1
14:15	A 1:600K Geological Map of the Sibelius Crater, Mercury. **Mark Canale, (The Open University)**
14:30	Geologic map of the Beethoven Quadrangle (H07), Mercury. **Laura Guzzetta, (IAPS)**
14:45	European regional-scale geological mapping of planet Mercury. **Valentina Galluzzi (IAPS)**
15:00	Web-based Geologic Mapping with MMGIS. **Fred Calef, (NASA)**
15:!5	**KEYNOTE** *Geologic Mapping and the Search for Signs of Ancient Life in Jezero Crater with NASA's Perseverance Rover*. **Kathryn Stack (California Institute of Technology)**
15:45	Discussion
16:00	BREAK
	Session 8 – Planetary 2
16:15	Stratigraphic-based bedrock geologic map of the Murray formation, Gale crater, Mars along the traverse of the Curiosity rover. **Christopher Fedo, (University of Tennessee)**
16:30	The use of mapping in selecting and characterising the ExoMars rover landing site. **Peter Fawdon, (The Open University)**
16:45	Evidence of aqueous alteration of layered deposits within Sera and Jiji, Mars. **Ilaria Di Pietro, (Università Gabriele D'Annunzio)**
17:00	Geological Mapping of Interior Layered Deposits Within Ophir, East Candor, and West Candor Chasmata, Valles Marineris, Mars.

	Josh Labrie, (Brock University)
17:15	Global Geological Mapping of Venus: Identification of Challenges and Opportunities for Future Research and Exploration. **James W Head, (Brown University)**
17:30	Discussion
DAY 3	
	Session 9 Oceans, seas and sedimentary basins
09.15	Mapping the ocean floor. **Tony Watts, (University of Oxford) Walter Smith (NOAA)**
09.30	Novel mapping of the shallow water INFOMAR dataset: towards Ireland's first shallow water atlas. **Riccardo Arosio, (Cork University)**
09:45	Geological mapping reveals the role of Early Jurassic rift architecture in the dispersal of calciturbidites: New insights from the Central and Northern Apennines. **Angelo Cipriani, (ISPRA)**
10:00	Traditional Field-Maps Technique Resolves Complex Growth History: The Boltaña Anticline Saga. **Cai Puigdefàbregas, (University of Barcelona)**
10:15	Subsurface Mapping of the Cretaceous Carbonate Platform in Oman. **Henk Droste, (University of Oxford)**
10:30	Discussion
10:45	BREAK
	Session 10 Interpretation and uncertainty
11:00	**KEYNOTE** *From map and compass to 3D models and digital outcrops: how biases influence mapping and interpretation.* **Clare Bond (University of Aberdeen)**

11:30	3D digital models: accuracy, precision, and applications. Examples from central Sicily (Italy). **Martina Forzese, (University of Catania)**
11:45	Strategies for Subsurface Mapping: A Journey to Computational Efficiency and Enhanced Modelling **Gwynfor Jones, (Halliburton)**
12:00	Supporting The Goal Of Net Zero Via Carbon Capture And Utilisation Storage With AI Derived Interpretation. **Ryan Williams, (Geoteric)**
12:!5	The digital transformation of geological mapping and modelling **Jonathan Ford (BGS)**
12:30	Discussion
12.45 – 14.00	Lunch break and map videos
	Session 11. Digital and meeting the access challenge
14:00	Geological Mapping in a Digital Age **Christopher Lambert, (SRK)**
14:15	The integration of virtual outcrop with traditional mapping, lessons for the future: examples from the Mull Lava Group, Isle of Mull, Scotland. **Jessica Pugsley, (University of Aberdeen)**
14:30	Geological mapping on Mars using 3D virtual outcrop analysis techniques **Robert Barnes, (Imperial College, London)**
14:45	Virtual Outcrops and Virtual Field Trips, Sharing and Disseminating Outcrop Information: Lesson from a Global Pandemic **John Howell, (University of Aberdeen)**
15:00	Virtual fieldtrips with real time remote collaboration as a better way communicate and understand geological processes. **Claudia Ruiz-Graham, (Imaged Reality)**
15:!5	The Rock Garden: creating a field course on campus to improve the accessibility of geological skills training. **Thomas Wong-Hearing, (Ghent University)**
15:30	Discussion
15:45	BREAK

	Session 12 Asia, mountains and closing reflections
16:00	Geological maps along the transect from the Lake Zone to the South Gobi Zone in SW Mongolia. **Pavel Hanžl, (Czech Geological Survey)**
16:15	The structural and metamorphic evolution of the Zanskar Himalaya, Suru Valley, NW India. **Ian Cawood, (University of Oxford)**
16:30	Mapping Mount Everest. **Mike Searle, (University of Oxford)**
16:45	Closing reflections and discussion **Mike Daly, (President, the Geological Society)**
17:30	Close