Early Careers Conference

Monday 11 - Wednesday 13 October 2021: *Soils: Past, Present and Future*

Join BSSS' Early Careers Committee for *Soils: Past, Present and Future*, sponsored by Arcadis, from **Monday 11 to Wednesday 13 October**, **10:00am - 3:15pm** each day. Featuring invited speakers and key workshops as well as oral and poster presentations from your peers, the Early Careers conference promises to be an opportunity to learn, discuss and network!

The conference is available **free of charge** to BSSS Early Career members and please register to attend in advance of the event: https://britishsocietyofsoilscience.wildapricot.org/event-4350195.

DAY ONE: MONDAY 11 OCTOBER

TIME	ACTIVITY	LOCATION
9:30	**Explore Gather Town and Networking**	All rooms in Gather Town
10:00	**Welcome from Dr Bruce Lascelles, President of BSSS**	Microsoft Teams
10:15	**Dr Binoy Sarkar** *(Lecturer at Lancaster University)* **Particulate plastics in the soil-plant system: Recent research advances future potentials** Particulate plastics pose a global environmental concern due to their widespread occurrence, distribution and severe ecosystem risks. As compared to aquatic systems, the fate, transformation and impact of plastic pollution are less explored in the terrestrial environment. Soil can be one of the main storage places of particulate plastics, conferring significant impacts on soil physio-chemical properties, microbial and other biological activities and plant performances. Particulate plastics can act as hot-spots and carrier of various organic and inorganic contaminants, posing direct and indirect risks to the safety of agricultural products. A few reports suggest that particulate plastics, especially nanoplastics, could directly be taken up via plant roots and/or interfere with plant essential nutrients uptake phenomena. Soil properties and various biotic and abiotic environmental factors on the other hand influence the fate and transformation of particulate plastics and their associated contaminants in the soil-plant system. This talk aims to present an overview of current research advances and challenges in the analysis, fate, transformation and potential mitigation strategies of particulate plastics in the terrestrial environment. An attempt will be made to identify knowledge gaps and future research prospects in this area.	Microsoft Teams link from Workshop Room in Gather Town
11:00	**Poster Session**	Poster Room in Gather Town

	The following Early Career members will be available by their poster for questions and answers: **Argha Basu** - *Borehole Microresistivity Imaging: A potential method in Soil Resource management and conservation* **Tinashe Mawodza** - *Unlocking the deepest frontier of plant productivity by understanding subsoil-root interactions* **Nancy Muringai** - *Investigating the influence of arable land-use practices and associated microbiomes on plant growth and disease response* **Silvia Arpano** - *Novel Polyacrylamide application to mitigate soil capping and sealing: a field trial in the context of leafy greens production*	
11:30	**Comfort Break and Networking**	Gather Town
12:00	**Oral Presentations** **12:00 - Kirsty Elliott** - *Utilisation of human faeces in crop production* **12:10 - Benjamin Freeman** - *Developing wind erosion mitigation strategies for UK lowland peat soils under agricultural use* **12:20 - Imelda Uwase** - *Soil life matters: does crop diversity increase the decomposing activity of rhizosphere microbes?* **12:30 - Olivia Azevedo** - *Historical effects on aggregate stability and SOC storage during forest succession* **12:40 - Question & Answers for all presenters**	Microsoft Teams link from Workshop Room in Gather Town
13:00	**Lunch and Networking**	Gather Town
14:00	***Writing About Soils* Workshop 1** **Phoebe Weston** *(Biodiversity Reporter at The Guardian)* **How to Get People's Attention When Writing About Soil** This presentation will look at how to make people listen when you write about soil, how to get the attention of journalists and how to deal with them when you do. It will also consider how to use Twitter to promote your work.	Microsoft Teams link from Workshop Room in Gather Town
15:00	**Conclusion and Final Comments for Day One**	Continued on Microsoft Teams
15:15	**Close**	

DAY TWO: TUESDAY 12 OCTOBER

TIME	ACTIVITY	LOCATION
9:30	**Explore Gather Town and Networking**	All rooms in Gather Town
10:00	**Welcome and Recap of Day One**	Microsoft Teams
10:15	**Dr Ria Mitchell** *(Experimental Officer at the University of Sheffield)* **Palaeosols (fossil soils) as records of environmental, climatic, evolutionary change through geologic time** Fossilised soils, or palaeosols, are preserved in the geologic rock record for the past ~3 billion years. Therefore, they provide insight into ancient environmental, climatic, and evolutionary changes over this time and have become a well-documented proxy in the literature. They provide a unique perspective of these Earth-wide processes because they form at the interface between the lithosphere, the hydrosphere, the atmosphere, and the biosphere, often preserving specific geochemical signatures of conditions at their time of formation. This talk will be in two parts: the first detailing the geological record of palaeosols, and the second highlighting some specific time periods in the evolutionary history of life on land and how it is linked with soil/palaeosol evolution.	Microsoft Teams link from Workshop Room in Gather Town
11:00	**Poster Session** The following Early Career members will be available by their poster for questions and answers: **Ana Natalio** - *Soil Free-living Nematodes as Soil Bioindicators in a Arable System* **James Dowers** - *Current knowledge on the impacts, benefits and trade-offs of mob grazing systems* **Yolande Booyse** - *How tillage impacts the biological component of soil health*	Poster Room in Gather Town
11:30	**Comfort Break and Networking**	Gather Town
12:00	**Oral Presentations** **12:00 - Adetunji Alex Adekanmbi** - *Temperature Sensitivity of Intracellular and Extracellular Soil Enzyme Activities*	Microsoft Teams link from Workshop Room in Gather Town

	12:10 - Emily Guest - *The role of grass-clover leys in arable rotations - impacts on soil aggregation, carbon storage and microbial communities* **12:20 - Ben Butler** - *Comparison of clay content as a particle size fraction and mineral fraction in Scottish soils* **12:30 - Maud van Soest** - *Landscape variability in soil nutrient pools around Kangerlussuaq (SW Greenland): implications for lake-catchment interactions* **12:40 - Question & Answers for all presenters**	
13:00	**Lunch and Networking**	Gather Town
14:00	***Writing About Soils* Workshop 2** **Dr Olaf Schmidt** *(Professor at University College Dublin)* **Writing About Soils for Different Audiences** The presentation will firstly focus on an Editor's view of the process of writing for and getting published in a peer-reviewed journal such as the *European Journal of Soil Science*. Secondly, the presentation will explore writing about soils for practitioners and the skills required by researchers to reach such an audience and increase dissemination and impact of soil research.	Microsoft Teams link from Workshop Room in Gather Town
15:00	**Conclusion and Final Comments for Day Two**	Continued on Microsoft Teams
15:15	**Close**	

DAY THREE: WEDNESDAY 13 OCTOBER

TIME	ACTIVITY	LOCATION
9:30	**Explore Gather Town and Networking**	All rooms in Gather Town
10:00	**Welcome and Recap of Day Two**	Microsoft Teams
10:15	**Professor Mark Fitzsimons** *(Professor at the University of Plymouth)* **Creating the Earth - Fabricated Soil** Soil degradation is a critical and growing global problem. Increase in the world population has added to pressure on soil, and its natural capital faces continuing decline. Within the European Union (EU), the legislative framework on waste management is provided by the EU Waste Framework Directive. The Directive sets the following waste hierarchy to be applied as a priority order in member states: prevention, preparing for reuse, recycling, other recovery and disposal. As such, disposal to landfill is the least favoured option meaning that a large amount of biodegradable waste must be diverted from landfills to other organic waste management practices. Artificial soils offer a potential route for the recycling of waste materials and their associated capital, within the terrestrial environment, and potential mixtures of large volume mineral and organic green waste have been evaluated for high (horticulture/agriculture) and low (amenity/restoration) value markets. This presentation will assess the feasibility of new soils composed from these materials and consider the opportunities and challenges ahead.	Microsoft Teams link from Workshop Room in Gather Town
11:00	**Poster Session** The following Early Career members will be available by their poster for questions and answers: **Annette Raffan** - *Do plant root interactions arising from mixed species environments have a greater ability to confer water stress resilience by shaping soil hydrological properties?* **Keeren Sundara Rajoo** - *Assessing heavy metal contamination levels in urban park soil of Putrajaya, Malaysia, using Geoaccumulation Index (Igeo) and Contamination Index (CI)* **Dean Bell** - *Safeguarding soil for street tree establishment: the role of engineered tree pit solutions*	Poster Room in Gather Town

	Caitlin Lewis - *Hidden dangers of converting UK woodlands to native species*	
11:30	**Comfort Break and Networking**	Gather Town
12:00	**Oral Presentations** **12:00 - Luke Harrold** - *Soil organic matter priming: mineralogy and the forgotten fraction of rhizodeposition* **12:10 - Catriona Willoughby** - *Using soil health assessments to design crop rotations that are fit for the future: a case study from UK field trials* **12:20 - Vito Abbruzzese** - *Application of Livestock Slurry Significantly Influences Microbial Biosynthesis and Cumulative Respiration in Agricultural Grassland Soil* **12:30 - Sarah Shepperd** - *Species diversity in forage pastures increase soil faunal diversity and arbuscular mycorrhizal colonisation* **12:40 - Question & Answers for all presenters**	Microsoft Teams link from Workshop Room in Gather Town
13:00	**Lunch and Networking**	Gather Town
14:00	***Skills for Soil Scientists in Industry*** **Workshop** **Dr Helen Simpson** *(Technical Director at Wardell Armstrong)* **Soil Scientists in Industry** Workshop outline: 1. Overview of what the soil scientists do at Wardell Armstrong 2. Overview of the skills that are required 3. Tips on gaining skills 4. Tips for tailoring your CV for industry 5. Q&A	Microsoft Teams link from Workshop Room in Gather Town
15:00	**Conclusion, Final Comments and Prize Presentation**	Continued on Microsoft Teams
15:15	**Close**	

About Arcadis

Arcadis is the world's leading company **delivering sustainable design, engineering, and consultancy solutions for natural and built assets**. They are more than 27,000 people, in over 70 countries, dedicated to improving quality of life.

What Arcadis stand for

With sustainability at the heart of everything Arcadis do, their focus is on maximizing their impact aimed at improving quality of life. The solutions they develop address important societal challenges around resilience, places, and mobility. Leveraging data and technology, Arcadis have the capabilities and services to meet client demands driven by global trends such as urbanization, climate change, digitalization, evolving stakeholder expectations and potential unforeseeable events.

SUSTAINABILITY

Arcadis embed sustainability across everything they do and apply their wealth of expertise and skills to deliver client solutions that are competitive, resilient, effective, and within planetary boundaries.

VISION

The world has changed the way we live and work. Unexpected events and megatrends such as rapid urbanization and climate change are putting pressure on communities, cities, and resources worldwide. As a business, Arcadis want to maximize their impact by harnessing the power of technology and data to develop solutions to today's global challenges. They are focused on improving the way resources are utilized, protecting our environment, creating transporting solutions, and planning for the places where we can enjoy our work and home lives.

VALUES

Arcadis differentiate themselves through their talented and passionate people, their unique combination of capabilities covering the entire asset lifecycle, their deep market sector insights, and their ability to seamlessly integrate health and safety, sustainability and digital components into the design of their solutions around the globe.