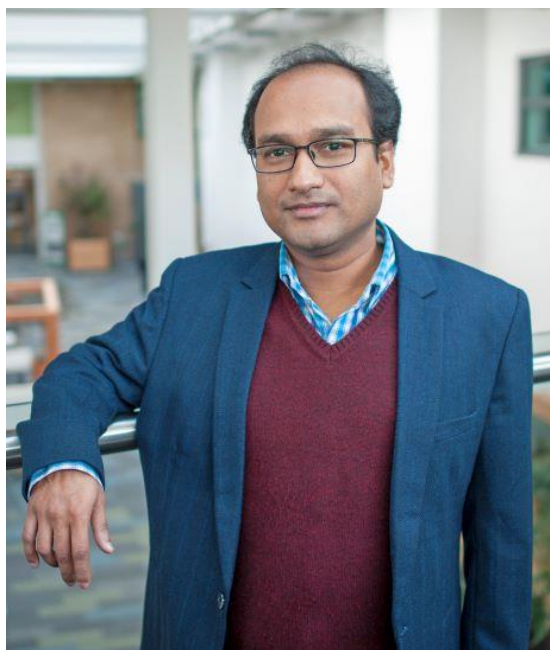


Early Careers Conference 2021

Binoy Sarkar



Dr Binoy Sarkar is a Lecturer at Lancaster Environment Centre of Lancaster University. His research focusses on the physio-bio-chemical phenomena occurring at the surfaces and interfaces of natural and introduced environmental particles including minerals, biochar, nanoparticles, and microplastics, extending practical applications to cleaning up emerging contaminants in soil and water, assessing contaminants fate and risk, and removing carbon dioxide from the atmosphere.

Dr Sarkar's published work includes more than 150 refereed journal articles including in *Nature*, *Nature Plants* and *Nature Reviews Earth and Environment* journals, 03 edited books, and 25 book chapters, with an h-index 41 (on Google Scholar, as of August 2021). He also holds an international patent for inventing a clay-based contaminant removal method.

Dr Sarkar is a recipient of the Australian Government Endeavour Research Fellowship, American Institute of Chemical Engineers Young Researcher Award, Australasian Soil and Plant Analysis Council Geof Proudfoot Award, and Indian Agricultural Research Institute Desai-Biswas Medal. He serves as an Associate Editor of *Critical Reviews in Environmental Science and Technology*, *European Journal of Soil Science*, and *Clays and Clay Minerals* journals.

Phoebe Weston



Phoebe Weston is a biodiversity reporter at The Guardian and writes mostly about British wildlife. She previously worked as the science correspondent at the Independent.

Phoebe grew up on a farm and is particularly interested in how agriculture and conservation can work together. She is very happy to be talking about soil because she believes it is underrated and important it gets pushed up the political agenda. It's also a hard sell!

<https://www.theguardian.com/profile/phoebe-weston>

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Ria Mitchell



Dr Ria Mitchell completed her PhD on Mesoproterozoic palaeosols in 2010 from Royal Holloway, University of London. Since then, she has undertaken three postdocs; one at the Natural History Museum (London) and two at Swansea University. Ria is currently an Experimental Officer in X-ray Computed Tomography at the University of Sheffield.

Ria is interested in the methods by which ancient terrestrial life lived on/within their substrates to promote organism-substrate interactions, weathering, soil development, and biogeochemical cycling. This is through studying rocks for physical, chemical, and biological indications of these interactions and weathering, but also from studying present day primordial landscapes as modern analogues, such as cryptogamic ground covers (containing bryophytes, lichens)

from Iceland and New Zealand. She employs numerous techniques to better understand these processes: tomography (e.g. 3D/4D imaging), microscopy (e.g. SEM, OM, FIB-SEM), chemistry (e.g. ICP-AES, XRD, SEM-EDS), and combinations of the above through correlative microscopy. It is important to understand these processes, particularly at various scales, to recognise how primordial biospheres contributed to shifts in biogeochemical cycling (and ultimately Earth-wide climate) millions of years ago. Specific time periods of interest include the evolution of the first terrestrial plants and biologically-mediated soils in the Early Palaeozoic, and the initial colonisation of land surfaces by microbial crusts in the Proterozoic. Ria is also interested in palaeobotany and palaeosols (fossil soils).

Olaf Schmidt



Olaf Schmidt is a Professor and Head of Subject of Agri-environmental Sciences at University College Dublin, Ireland. His main teaching and research areas are soil ecology, entomology and agri-environmental management.

Since 1994 he has served on editorial boards of various journals (including Applied Soil Ecology, Pedobiologia, Soil Organisms, Soil Research) and he is currently Deputy Editor of the European Journal of Soil Science.

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Mark Fitzsimons



Mark Fitzsimons is a Professor of Environmental Chemistry at the University of Plymouth, UK, where he leads the Biogeochemistry Research Centre. With a background in the study of complex marine and freshwater systems he has researched the occurrence and environmental behaviour of, for example, nitrogen and phosphorus in surface waters from remote oceanic environments to river waters. This has included simple molecules such as amino acids through to more complex pharmaceutical compounds; the latter work, which includes behaviour in soils, has the goal of providing mechanistic data on the fate of pharmaceuticals so that their environmental risk can be evaluated. His group demonstrated an environmental pathway for the complete breakdown of benzodiazepines, a major class of prescribed pharmaceuticals (e.g. Valium) in the aquatic environment, the first time that this was achieved.

Mark has studied the functioning of soils over the past 10 years with an emphasis on the performance of constructed (artificial) soils, focussing on their performance and the chemistry of key parameters, comparing their functionality to those of natural soils. His research in this area has included a comprehensive biogeochemical study of established artificial soils and their optimisation. He works with businesses to investigate the feasibility of making soils from inert waste materials, to provide sustainable solutions to waste management, while exploring the changes to regulatory frameworks that might be needed to advance this technology.

Helen Simpson



Dr Helen Simpson is a Technical Director at Wardell Armstrong and manages the soils and agriculture team, providing soils (including peat) and agricultural advice to a range of clients from individual landowners to multi-national companies. She also specialises in Environmental Site Management and EIA and has extensive knowledge of a wide range of technical disciplines, project management and commercial skills acquired during more than 17 years within the environmental sector, following a successful academic career. Her detailed understanding of the range of potential constraints to development resulting from different environmental aspects, combined with her strong awareness of the needs of developers and the practicalities of construction and development, ensures that the needs and protection of the environment are successfully balanced with financial and developmental requirements.

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