

STUDY UK EAST ASIA VIRTUAL MASTERCLASS SERIES

MASTERCLASSES IN SCIENCE

Changing Environment, Changing Lives: Assessing Risk from Climate Change in South East Asia

on Tuesday 23 November 2021

University of Southampton



Prof Craig Hutton

Professor of Sustainability Science, School of Geography and Environmental Science

Introduction to Integrated Science - an interdisciplinary approach to the natural sciences

on Wednesday 24 November 2021

University of Warwick



Robert Cross

Professor of Mechanochemical Cell Biology

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The UK has a special place in the history of science. From Isaac Newton to Charles Darwin, Rosalind Franklin and Stephen Hawking, we've been globally recognised for our discoveries since the very earliest days of science. We've also been one of the most innovative countries in the world in applying discoveries to every aspect of our lives, pioneering new ideas and technologies from the factory to the home. It is no surprise then that our research is world-leading. We produce the third highest amount of scientific research in the world. In fact, 91 Nobel Prize winners have been British over the years, and many others have chosen to study here. Our universities are currently home to plenty of future candidates.

Time:

Country	UK (GMT)	Indonesia (WIB) Thailand Vietnam	Mainland China Hong Kong SAR Malaysia, Singapore, Brunei, Taiwan	South Korea Japan
Time	08:30 to 09:45	15:30 to 16:45	16:30 to 17:45	17:30 to 18:45

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**University of Southampton: Changing Environment, Changing Lives:
Assessing Risk from Climate Change in South East Asia**

Date: Tuesday, 23 November 2021

Masterclass brief:

With populations and economic activities concentrated along coastlines, and high dependence on agriculture and supporting water resources, ASEAN countries are highly vulnerable to climate change. To cope with sea-level rise and greater frequency and severity of extreme weather events, development planning must strengthen adaptive capacity. Data may exist on a regional and local level, yet it has not been integrated into a robust framework of systemic risk where risk is based upon hazards and the vulnerability of the population.

The School of Geography and Environmental Science, University of Southampton leads a team of UK, Vietnamese and Thai researchers, funded by the British Council, in exploring how to build within-country capacity, and identify the data, modelling and workflow needs required, to effectively quantify water resource and flood management risks in two diverse ASEAN regions: the Mekong Delta, Vietnam and Thailand's Chao Phraya basin - recognised as some of the most vulnerable areas to sea-level rise in the world. By establishing what data sets and models are required and designing analyses that bring these together we can assess climate risk in an optimal, accessible and policy-relevant way. This ongoing work will be enabled by the development of gender- and equity-sensitive flood and water resource risk maps and will constitute contribution to COP26.

Presenter:

[Prof. Craig Hutton](#), Professor of Sustainability Science at School of Geography and Environmental Science, University of Southampton has worked with UN agencies, national governments and charities (NGOs) in many countries across the globe, looking at how environmental change, such as the climate, has impacted the livelihoods and lives of rural communities. Working with colleagues who are experts in flooding, drought, salinity, storms and other environmental stresses, as well as mapping poverty, land use and sediment extraction, Prof. Hutton has developed methods for assessing who and where climate and environmental change will impact the most. This is called vulnerability mapping and shows which populations are likely to be impacted by what hazards. This is done so that policy makers and people who make decisions about how to tackle poverty and protect the land can understand where to focus their efforts.

A large part of Prof. Hutton's work has focused on river delta systems, including the Volta Delta in Ghana, the Ganges Brahmaputra Meghna Delta in Bangladesh and India and the Mekong Delta in Vietnam. Fertile delta systems are often important for the production of food and population settlement but are in the front-line when it comes to the potential impacts of climate change with sea-level rise, river and coastal flooding, longer periods of drought as well as heavy pressures from human development.

University of Warwick: Introduction to Integrated Science – an interdisciplinary approach to the natural sciences

Date: Wednesday, 24 November 2021

Masterclass brief:

Integrated Science is a new approach to the natural sciences, aiming to train students to draw freely on the techniques and mindsets of a range of disciplines, including Biology, Chemistry, Physics, Mathematics and Computing. Right from the outset, students are guided by expert scientists to address scientific problems by experiment. Computing, predominantly using Python, threads through the course. In this session, Prof. Cross aims to explain what this innovative new course offers to students. The pioneering students have just completed their first year and the masterclass will describe what they have learned during the year.

Presenter:

[Prof. Robert Cross](#) is Professor of Mechanochemical Cell Biology at University of Warwick. As a researcher, Prof. Rob Cross is working to understand the fundamental mechanisms of molecular motors, the microscopic engines that drive cells to divide. Following postdoctoral work in Salzburg and at MRC-LMB in Cambridge, Rob moved to Marie Curie Cancer Research, where he made a series of discoveries about kinesin, the major molecular motor in our brains. In 2010, Rob moved to establish a new Centre for Mechanochemical Cell Biology (CMCB) at Warwick university. Most recently, he and his colleagues have founded a unique new four-year undergraduate course, Integrated Science, aiming to train the next generation of scientists to think and move freely across the boundaries between disciplines.

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