Durham University
Institute of Hazard, Risk and Resilience

Institute of Hazard, Risk and Resilience Seminar Series 2022-2023

1pm to 2pm
room w007, geography building,
Durham University

If you are participating online registration is essential: register here

Monday 3rd October, Professor Claire Horwell
Forty years of volcano health research and practice: from Mount St. Helens 1980 to Tonga 2022

Bio: Claire Horwell is a Professor of Geohealth in IHRR and the Department of Earth Sciences at Durham University. She founded the International Volcanic Health Hazard Network (www.ivhhn.org) in 2003 and, in that role, advises the World Health Organization, UK government and many international governmental and non-governmental agencies on preparing for the health responses to volcanic eruptions. She works across the Earth, health and social sciences on hazard assessment and protection of communities from air pollution generated by volcanoes, and other natural and anthropogenic sources. She was awarded the European Geosciences Union's Plinius Medal in 2020 for excellence in interdisciplinary research and impact related to natural hazards.

Abstract: The response to the 1980 eruption of Mount St. Helens involved a pioneering, rapid and detailed evaluation of the health risks of inhaling volcanic ash. This interdisciplinary effort, conducted by clinicians, epidemiologists, toxicologists and geochemists found that volcanic ash could contain concerning quantities of the potentially pathogenic mineral crystalline silica and showed that volcanic ash exposures could exacerbate existing respiratory conditions. This ground-breaking work set the scene for a new field of research, methodological development and practice, commencing again, in earnest, at the onset of the Soufrière Hills eruption, Montserrat in 1995. This talk will review the research and practice which has been conducted since then. This will be set in the context of the developing role of the International Volcanic Health Hazard Network. Since its inception in 2003, IVHHN has evolved from an interdisciplinary forum into an international organization which provides

World Health Organization endorsed, evidenced-based public information and advises governments on how to prepare for, and respond to, the health-related consequences of eruptions.

Monday 17th October, Igor Kotsiuba, PhD

Title and abstract to be confirmed

Bio: Dr Kotsiuba focuses on Cybersecurity and Critical Infrastructure Security. He is a partner at CyberDesk, and has been providing services to national and international clients in the fields of information security, cybersecurity and digital investigations in Ukraine, Kazakhstan, Germany and the United Kingdom for more than 10 years. Igor has an outstanding record of implementing the best global information security practices and frameworks for a wide range of companies. He is actively involved in scientific and research activities in the area of cybersecurity within the projects of the European Commission in cooperation with leading specialists from the University of Reading, research laboratories of the Universities of Leeds and Newcastle. Dr. Kotsiuba is eminently qualified in the field of cybersecurity; he is a participant of the EU Horizon Research and Innovation and a key expert in regional EU projects. Igor holds a PhD degree in Information Technology and is a member of IEEE. Igor is regularly invited as a keynote speaker and a guest lecturer to European universities and leading international conferences on cybersecurity.

Monday 31st October, Virginia Murray

Title and abstract to be confirmed

Bio: Virginia Murray FFPH, FRCP, FFOM, FRCPath, qualified in medicine. In 1980 she joined Guy and St Thomas's Hospital Poisons Unit and in 1986 was appointed consultant medical toxicologist. In 1989 she started the Chemical Incident Research Programme and was Director of the Chemical Incident Response Service from 1995. Virginia was appointed as Consultant in Global Disaster Risk Reduction for Public Health England in April 2014. This appointment is to take forward her work as vice-chair of the UN International Strategy for Disaster Reduction (ISDR) Scientific and Technical Advisory Group and as the Chair of the Science & Technology Organising Committee for the UNISDR Science and Technology Conference on the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 January 27-29 2016. From 2003 Virginia worked for the Health Protection Agency's Centre for Radiation, Chemicals and Environmental hazards (CRCE). She has considerable experience in advising on toxicological and environmental public health aspects of response to acute and chronic chemical and extreme event incidents. Appointed as Visiting Professor in Health Protection, Visiting Professor in Health Protection, MRC-HPA Centre for Environment and Health, Imperial College and King's College, London (2004), she has also published widely.

Monday 14th November, Ellen Robson

Title and abstract to be confirmed

Bio: Ellen is a PDRA in Geotechnical Engineering at the IHRR. Her research focuses on developing stakeholder-focused guidance and methodologies in slope stabilisation for lower income countries. Ellen has just submitted her PhD thesis in Geotechnical Engineering at Newcastle University, which was sponsored by NERC IAPETUS. Her PhD aimed to further understand some of the causes for inadequate road slope stabilisation in lower income country settings and develop stakeholder-focused methodologies based on the findings to aid the planning and design of road slope stabilisation. During her PhD she carried out field work in Nepal and Laos, as well as conducting multiple numerical and lab-based slope stability experiments. Prior to her PhD, Ellen received an MSci in Geology from the University of Birmingham.

Monday 28th November, Gemma Sou

Title and abstract to be confirmed

Bio: Gemma is a development geographer interested in human-environment relations, drawing on postcolonial discourse and ethnographic methods to explore everyday experiences of disasters, development aid partnerships, and creative research translation. Gemma supervises doctoral students on postcolonial approaches to disaster studies, development aid and media representations of human vulnerability.

Monday 9th January, Aaron Neill

Title and abstract to be confirmed

Bio: My research is centred on understanding the spatio-temporal drivers of hydrological hazards such as diffuse pollution and flooding. I am particularly interested in the use of agent-based modelling approaches to trace the flow paths and source areas contributing to impaired water quality or high flow events. Such knowledge is needed to optimise spatial targeting of mitigation measures with the potential to address multiple hazards simultaneously. Thus far, I have designed and developed the Model for the Agent-based simulation of Faecal Indicator Organisms (MAFIO), which has been successfully applied to a small agricultural catchment in NE Scotland. MAFIO provides the basis for the development of a multi-agent toolkit that will simulate additional water quality parameters and flood waters; this is the focus of my present work within the Institute of Hazard, Risk and Resilience. I am also interested in exploring new approaches for visualising model output and uncertainty to aid effective communication to stakeholders. Prior to my current post, I completed my PhD and first postdoc at the University of Aberdeen. The former developed a suite of modelling tools to better understand drivers of impaired microbial water quality, whilst the latter applied tracer-aided ecohydrological models to quantify the impacts of land use change on water partitioning.

Monday 23rd January, Joy Sinderbrand

Title and abstract to be confirmed

Bio: For over a decade, Joy has been focused on the major infrastructure projects that shape New York City. From transportation to economic development to affordable housing, Joy manages multi-disciplinary teams that transcend complex contexts to move projects forward and currently leads the New York City Housing Authority's Recovery and Resilience Department. Created in the aftermath of Superstorm Sandy, Joy's team is responsible for capital projects associated with the impacts of that storm, as well as preparing the agency more broadly for the future impacts of climate change. Joy manages the execution of projects at over 35 developments leveraging NYCHA's record $3 billion FEMA grant and other disaster recovery funding. To date, over $2.4 billion has been invested in repairs and resilience retrofits at affordable housing benefitting 60,000 of the most vulnerable New Yorkers. The critical lessons learned by NYCHA are being used to update the agency's design guidelines and inform policies at the city and state levels. Previously, Joy worked with developers, non-profits, universities, unions, and government agencies to advance development projects and public-private partnerships. At the Port Authority of New York & New Jersey, Joy worked directly with executive staff on redevelopment of One World Trade Center and projects to expand capacity at New York's Penn Station.

Monday 6th February, Rebekah Harries

Title and abstract to be confirmed

Bio: I am an interdisciplinary geomorphologist interested in climate as a driver of sediment mobilisation through mountain ranges and downstream into flood prone areas. Since completing my PhD with the University of Edinburgh, I have worked as a Postdoc Fellow at the Pontifical Catholic University of Chile and the Chilean National Research Centre for Integrated Natural Disaster Management (CIGIDEN). I combine field data with numerical models to better understand the

complex links between rainfall, erosion and sediment transport. Increasingly, I am investing more time in science communication through art and always looking for new collaborations.

Monday 20th February, Mike Winter

Title and abstract to be confirmed

Bio: Mike is a Chartered Civil Engineer, ICE Fellow, Chartered Geologist and a UK Registered Ground Engineering Adviser. He has national and international experience in research and specialist consultancy in geotechnical engineering, engineering geology, and waste materials. In addition, he has contributed to, managed, and directed projects across the full range of transport sector disciplines. His work has been published in around 300 journal/conference papers, and published reports and is widely implemented in specifications and standards. He has led failure investigations, acted as an expert witness, and sat on national and international committees and steering groups. He has made major contributions to the procedures and methodologies for landslide hazard and risk assessment and risk reduction, earthworking (particularly glacial till and high stone content materials), and the engineering use of secondary/waste materials (including spent oil shale and tyre bales). Mike was the external lead on Transport Scotland's Scottish Road Network Landslides Study following the debris flow events of August 2004. This systematically assessed hazard and risk and developed a management and mitigation strategy. Mike led TRL's involvement in SafeLand ('Living with landslide risk in Europe: assessment, effects of global change, and risk management strategies'). Current landslides work includes ongoing site evaluations and QRA, warning system assessment, and the economic impact of landslides. His work also focuses on the climate change impacts and the economic impacts of events, including geohazards, and delivering adaptation and enhancing resilience. Mike is the joint longest-serving Chief Scientific Editor of the QJEGH (January 2007 to December 2012) and former Chair of the Scottish Geotechnical Group. He Chaired the Conference Organising Committee for the XVI ECSMGE 2015 in Edinburgh. It was the largest in this series of conferences and the largest Civil Engineering conference ever held in the UK. The seven-volume proceedings is the largest book that the ICE has published in its near-200 year history.

Mon 6th March, Carly Beckerman

Title and abstract to be confirmed

Bio: Dr Beckerman joined Durham University in 2014 to focus on the political psychology of British and American foreign policy in the Middle East and is the Executive Director of the Institute of Hazard, Risk and Resilience. She received her PhD in International Studies from the University of Birmingham in 2013 and spent one year as a Visiting Fellow at the Middle East Centre, London School of Economics and Political Science while lecturing in Foreign Policy Analysis at City University, London. Dr Beckerman's research is situated between the fields of Foreign Policy Analysis (FPA) and Conflict Resolution, with a particular focus on the Israel-Palestine conflict.