

British Academy

Knowledge Frontiers: International Interdisciplinary Research Projects 2017

The British Academy has supported 9 research projects through its *Knowledge Frontiers: International Interdisciplinary Research Projects* (2017). These awards begin in January 2018.

Reference: KF1\100043

PI: Dr Sarah Hartley, Senior Lecturer in Management, University of Exeter

Co-Applicants: Professor Samba Diop, Professor of Anthropology and Bioethics Core Lead, University of Sciences, Techniques and Technologies of Bamako; Dr Nafomon Sogoba, Senior Scientist, Core Leader and Head of Geographic Information System and Remote Sensing, University of Sciences, Techniques and Technologies of Bamako; Dr Sabina Leonelli, Professor in Philosophy and History of Science and Co-Director of the Exeter Centre for the Study of the Life Sciences (Egenis), University of Exeter; Professor Richard Owen, Professor of Innovation Management, University of Bristol; Professor Frederic Tripet, Professor in Medical and Molecular Entomology, Keele University

Title: *Co-producing Knowledge Co-production Across Disciplines and Borders: The Case of Gene Drive Mosquitoes in the UK and Mali*

Abstract: Knowledge co-production (KC) has become a popular buzzword in the challenge-led agendas of research funders in the Global North, yet it is not well defined when knowledge is co-produced across disciplines and across borders that stretch from the Global North to the Global South. This project will co-produce an empirically grounded, international and transdisciplinary KC framework. Taking an interpretive approach, the research team will explore the meaning of KC in the case of gene drive mosquito technology for malaria control developed in the UK and Mali, where the scientific community is committed to KC yet has not defined it in practice. It will use qualitative methods, including documentary analysis, interviews, lab ethnographies and workshops to enable Malian actors to shape the very meaning of KC in advance of its implementation and to build new insights and methods for application in other cases of high technology developed with and for the Global South.

Reference: KF1\100069

PI: Professor Simon Marvin, Professor and Director of Urban Studies, University of Sheffield

Co-Applicants: Dr Nancy Odendaal, Associate Professor, University of Cape Town; Professor Tony Prescott, Director of Sheffield Robotics, University of Sheffield; Dr Metoja Kovacic, Research Associate, University of Sheffield; Dr Aidan While, Senior Lecturer, University of Sheffield

Title: *Drones/Robotics and Development Priorities in Africa: Transformative Infrastructure or Digital Colonisation?*

Abstract: Africa is emerging as a critical site for experimentation with drones in the creation of new infrastructural systems to support national developmental priorities. Drone service delivery can transform lives by compensating for inadequate or absent infrastructure but they are at an early stage of development and there are competing interests in drone development that mean the developmental potential may not be realised. Although they have attracted growing interest, the diverse options and experiments in African drone infrastructure have not been subject to wider research or societal scrutiny. The purpose of this project is to explore and analyse the following

questions: What are the opportunities and challenges in developing these new infrastructure networks? Where are new drone infrastructures being developed in Africa and what organisations are involved in experimental practices? What lessons might be learned for the future?

Reference: KF1\100013

PI: Professor Jane Plastow, Professor of African Theatre & Deputy Director, Leeds University Centre for African Studies, University of Leeds

Co-Applicants: Professor John Walley, Professor of International Public Health, University of Leeds; Dr Florence Muhanguzi, Senior Lecturer, Makerere University; Mrs Lilian Mbabazi, Assistant Lecturer, Makerere University

Title: *Engendering Equality: Working Holistically in a Ugandan Slum Neighbourhood to Challenge Gendered Inequalities, Sexual Ignorance and Abusive Sexual Behaviours*

Abstract: This project will work in 7 schools (4 primary, 3 secondary) in the working class/slum neighbourhood of Walukuba/Masese in Jinja, Uganda. The project builds on related work over the past three years with communities in Walukuba that has evidenced widespread gender inequalities and sexual and reproductive health challenges, particularly amongst girls. It privileges a dialogic, participatory and creative methodology that prior work has shown to be richly generative and impactful. This action research project brings together arts, public health, education, gender and anthropology researchers from the UK and Uganda to work with 280 young people (aged 13-16) and local community arts activist organisation 'We Are Walukuba'. The project aims to promote gender equality and health and well-being in relation to sexual relationships and activity among young people, and support regional and national authorities in delivering more effective and impactful sexual and reproductive health and gender education programmes in schools.

Reference: KF1\100091

PI: Dr Eleanor Joanne Brown, Lecturer, University of York

Co-Applicants: Dr Lynda Dunlop, Lecturer in Science Education, University of York; Dr Joshua Kirshner, Permanent Lecturer, University of York; Dr Kelly Redeker, Lecturer, University of York; Professor Paul Walton, Professor of Chemistry, University of York; Dr Richard Friend, Lecturer, University of York; Professor Jean Grugel, Professor of Development Politics, University of York

Title: *STRIPES: Social Transformative Research Informing Processes of Environmental Science Co-Production of Knowledge in the Case of the Granbio Advanced Bio-refinery in Alagoas, Northeast Brazil*

Abstract: The creation of enzymes for a bioethanol-from-cellulose reactor, presents innovative solutions to the global need for sustainable fuels. The implementation of these technologies and associated infrastructure raises questions about how it can be developed in ways that simultaneously address broader environmental and social justice goals. This research brings together lay and academic communities in order to co-produce knowledge to inform further developments aimed at meeting energy demands in developing economies. Through reflection upon the assumptions that inform mainstream approaches to development, the research team will engage in interdisciplinary dialogue between social and natural scientists involved in development research. It will thus interrogate the questions, priorities and criteria used when new technological developments are proposed. A case study of the first operational advanced (second-generation) bio-refinery in Brazil will investigate decision-making processes from a range of stakeholder

perspectives, including those of rural farming communities. The findings will inform decision-making in relation to nascent bio-refinery projects.

Reference: KF1\100024

PI: Dr Felice Wyndham, Research Fellow, University of Oxford

Co- Applicants: Dr John Fanshawe, Senior Strategy Adviser, BirdLife International; Alberto Yanosky, Executive Director, Guyra Paraguay; Dr Karen Park, Assistant Professor, University of Pittsburgh

Title: *Articulating Biocultural Values in Bird Conservation Networks from Local to Global: A Paraguayan Case*

Abstract: This research explores the ways ecological knowledge systems are articulated from local, lifeworld- and place-based experience to national, regional, and international levels of policy and practice. It brings together anthropologists, linguists, biologists, and conservation policy scientists. The research team will complete a case study of linguistic and cultural values in Paraguayan bird conservation, via a focussed ecolinguistic ethnography with Ayoreo and Yshir communities in the northeastern Chaco region. It compare findings with similar projects in Panamá and Guyana to explore the role of language, creative humanities, and indigenous expertise in ecology, conservation and development. The results will contribute to ongoing policy, scholarly, and educational conversations in Paraguay, regionally, and internationally. A key contribution will be the creation of a lasting communication pathway for language and cultural values to enter policy conversations at the highest levels by bridging between the Ethno-ornithology World Archive (EWA) and World Bird Databases (WBDB) at BirdLife.

Reference: KF1\100033

PI: Dr Minna Sunikka-Blank, Senior University Lecturer, University of Cambridge

Co-Applicants: Dr Charlotte Lemanski, Senior Lecturer, University of Cambridge; Dr Ruchi Choudhary, Reader in Architectural Engineering, University of Cambridge; Professor Jaideep Prabhu, Professor of Marketing, Jawaharlal Nehru Professor of Indian Business and Enterprise, and Director, Centre for India and Global Business, University of Cambridge; Professor Ronita Bradhan, Assistant Professor, Indian Institute of Technology Bombay

Title: *Gender and Household Energy: Female Participation in Designing Domestic Energy in India's Slum Rehabilitation Housing*

Abstract: Women's involvement in decision-making in domestic energy in human settlements remains an under-researched area, especially in the urban context. This research adopts a gendered perspective in exploring energy use, household practices and adaptation of new technologies in slum rehabilitation housing in India. Drawing from the interdisciplinary expertise of engineering and social sciences, the project aims to understand 1) quantitative energy use, household air pollution and environmental conditions in the housing units, and 2) female occupants' comfort, cooking and child rearing practices, needs and aspirations. The research asks how women are currently included in the design and delivery of slum rehabilitation housing schemes in India. It investigates knowledge exchange between policy makers, developers, designers and female occupants focused on strategies to increase women's participation in the design process.

Reference: KF1\100037

PI: Dr Michael Buser, Senior Research Fellow, University of the West of England, Bristol

Co-Applicant: Dr Anurak Sriariyawat, Associate Professor, Chulalongkorn University

Title: *Community Resilience in Locales of Coastal Erosion: Local Knowledge, Culture and Practice in the Upper Gulf of Thailand*

Abstract: This project, a collaboration between the UK and Thailand, will engender new interdisciplinary and international partnerships in order to study the impacts and adaptation measures associated with coastal erosion. The programme will draw on creative and participatory arts practice to critically examine community-based disaster risk reduction including how local knowledge can be better integrated with expert and professional contexts as well as policy-makers. The research will centre on understanding the experiences and capacities of individuals and local organisations in the Upper Gulf of Thailand, one of the most threatened coastal areas in the world. The results will feed into national and international policy arenas with a particular contribution of understanding the ways in which lay knowledges can be harnessed towards improving integrated coastal management in areas of extreme vulnerability.

Reference: KF1\100065

PI: Dr Gavin Sullivan, Reader in Social and Political Psychology, Coventry University

Co-Applicants: Dr Saut Sagala, Assistant Professor, Institute of Technology Bandung; Dr John Elliott, Royal Society University Research Fellow & University Academic Fellow, University of Leeds; Dr John Drury, Reader in Social Psychology, University of Sussex; Dr Paula Repetto, Associate Professor, Pontifical Catholic University of Chile; Dr Ekbal Hussain, Research Scientist, British Geological Survey; Emma Critchley, Independent Artist

Title: *Extending the Seismic Cities intervention from Santiago, Chile to Bandung, Indonesia: An Interdisciplinary Approach to Improve Community and City Resilience to Seismic Risk*

Abstract: Seismic Cities is an interdisciplinary GCRF-funded research collaboration between the UK and Chile from January 2017 to December 2017. The project has the long-term aim to address the sustainable cities and communities challenge in urban and nearby rural regions prone to earthquake hazards by increasing resilience to such seismic shocks. The concept builds upon the Cities on Volcanoes framework promoting multi-disciplinary applied research and linking physical scientists with city authorities, emergency managers, academics, artists and local communities. By bringing together diverse actors in a specific "Seismic City", the approach has the potential to be a powerful intervention to strengthen preparedness efforts in developing nations. The research team will combine research findings and artistic representations of the San Ramon fault in Santiago, Chile with new data and art works generated in Bandung, Indonesia to raise awareness about the Lembang fault, which has been recently recognised as active and capable of having major earthquakes.

Reference: KF1\100023

PI: Dr Anna Rabinovich, Senior Lecturer, University of Exeter

Co-Applicants: Professor William Blake, Professor of Catchment Science, University of Plymouth; Professor Patrick Ndakidemi, Professor of Agricultural Sciences, The Nelson Mandela African Institute of Science and Technology (Tanzania).

Title: *Averting a “Tragedy of the Commons” in Maasai Land: Exploring Predictors of Communal Land Degradation and Developing Pathways to Change in Northern Tanzania*

Abstract: Extensive land degradation presents a critical threat to society welfare in many East African countries. Vital livelihood-providing ecological systems have been brought to a tipping point by soil erosion, undermining food security and thwarting economic development of pastoralist communities. One factor that severely exacerbates the rates of land degradation is the so called “tragedy of the commons”—a lack of concern for communally shared land and consequent use of suboptimal land management practices. Using an interdisciplinary approach, this project aims to address this dilemma in one of the strongly affected countries – Tanzania. The research team will collect evidence of communal land degradation and develop an evidence-based model that brings together physical and socio-psychological determinants of erosion on communal land. It will then conduct a stakeholder engagement workshop to facilitate exchange between local and academic knowledge, enhance public understanding of the problem, and provide space for developing community-owned solutions.