

Institution: University College London
Unit of Assessment: 17B Geography, Environmental Studies and Archaeology: Geography
<p>a. Context</p> <p>The Departmental mission is the production of outstanding research and its translation into impact, achieving real benefits beyond academia. The distinctiveness of our impact is framed by (i) a long-term commitment to public service, embedded within UCL's culture of support for the beneficial application of knowledge; (ii) the relationships that abound in a large institution with a global reach; and (iii) the ability to draw on and contribute to London's cultural and economic arena.</p> <p>Key users of our research include: international organisations (Organisation for Economic Co-operation and Development [OECD], European Commission, United Nations Economic Commission for Europe [UNECE], UNESCO, UN Food and Agriculture Organization, UNEP-IUCN [World Conservation Union], WHO, IPCC); UK Government (Home Office, Department of Health, Department of Energy and Climate Change [DECC], Defra, Environment Agency [EA], Foreign and Commonwealth Office, UK Border Agency, Department for International Development, Met Office: British Geological Survey [BGS]); NGOs (African Foundation for Development [AFFORD], CAFOD, Comic Relief, National Trust, WaterAid, WWF); overseas governments and agencies (British Council, European Space Agency [ESA], NASA, South African National Parks Service, US National Interagency Fire Center); industry (Energy, Engineering, Insurance, Space companies, Waste, Water); community groups, including those that are considered 'hard-to-reach'; audiences in London and its environs; and the general public.</p> <p>To these user groups we deliver diverse types of impact, including (i) the transfer of specialist knowledge and the provision of expert advice to governments, policy makers and industry; (ii) reporting and provision of data to meet the UK's international obligations; (iii) raising public awareness of and participation in, environmental, cultural and political issues; (iv) developing products and tools for use by international and national agencies, organisations and industry.</p> <p>Since 2008, our research groups have delivered these and other impacts to beneficiaries both within and beyond the UK. Examples include: analysis by the Migration Research Unit (MRU) of data on migration and asylum flows for the Home Office and provision of advice to the Home Office, the OECD and the Equality and Human Rights Commission on migration policy. Researchers in the Transnational Spaces cluster collaborated with the Foreign and Commonwealth Office to improve procedures for policy formation. Members of the Comparative Urbanism cluster have informed urban planning policy and practice in South Africa, India, Canada and Latin America. Members of the Science, Politics and Government cluster have provided expert advice to health agencies and policy-makers on the geographical dimensions of health and the Parliamentary Health Select Committee on alcohol regulation; they have also promoted more effective governance of Marine Protected Areas around the world. Members of the Environment Modelling and Observation cluster have engaged with African government water ministries, NGOs and third sector partners, to provide new perspectives on water resources and management; they have also informed Flood and Coastal Defence policy in the UK and disseminated coastal research perspectives and capabilities to stakeholder and public audiences. The Environmental Change Research Centre (ECRC) has monitored the effectiveness of UK government policies on pollution and informed UK nature conservation and management policy.</p> <p>b. Approach to impact</p> <p>The Department has a long history of encouraging and enabling research likely to generate non-academic impacts. The majority of our impacts have been nurtured through long-term engagement with key users and participation in institutional initiatives; at the same time our approach ensures that impacts arising on an <i>ad hoc</i> basis are recognised and fully exploited. Since 2008, this has been achieved via the following mechanisms and activities:</p> <p><i>Encouraging consultancy with public and private bodies as a way of disseminating research knowledge and expertise, and as a means of sharpening research practice:</i> UCL operates a system that allows academic staff to undertake up to 40 days consultancy per annum, that work being facilitated by UCL Consultants Ltd (UCLC) with contracts, billing and professional indemnity insurance. The Department encourages staff to capitalise on the opportunities to undertake consultancy work for external organisations both via UCLC and through our in-house consultancy, ENSIS Ltd. A distinctive aspect of our approach to promote consultancy is our guarantee to</p>

academic consultants that up to 80% of the fee income can be retained. Since 2008, 18 of our staff have undertaken formal consultancy services via UCLC for a total contracted value of £264K. The majority of these contracts arose as a direct result of staff reputations for research excellence and expertise in their fields, cemented in many cases by long-standing relationships with bodies such as EA, Defra, Natural England, BGS, Crown Estate, English Heritage, ESA, various UN agencies, as well as industry clients such as HR Wallingford, Haskoning plc, and Halcrow plc.

Supporting specific research centres and consultancy arms to maximise impact: A key principle of the Department's approach to impact is a long-standing (20 year) commitment to provide space, resources, laboratory use and technician time to research groups involved in gathering and reporting data to meet the UK's international obligations, and also in raising public awareness of and engagement with environmental issues. Throughout the period of assessment the MRU has been the UK correspondent to the OECD, submitting Annual Reports on International Migration on behalf of the Home Office. ECRC and ENSIS run the UK Acid Water Monitoring Network and Freshwater Umbrella project, which has provided the evidence base informing the UK Government's response to its EU and UNECE commitments to combat acid rain and the EU Water Framework Directive to establish reference conditions for lakes. ECRC also runs the OPAL Water Centre aimed at encouraging greater understanding of the aquatic environment through public participation in water quality and biodiversity assessment.

Initiating links with industry: In 2012 we appointed a Knowledge Transfer and Enterprise Liaison (Longley) to link with the UCL School and Faculty Enterprise Board. We have engaged heavily with the Knowledge Transfer Partnership (KTP) schemes, which led to our hosting the two largest UCL schemes with Southwark and Camden Primary Care Trusts. This Partnership developed new ways of using health sector and other local data to improve local health care planning; applications included analysis of teenage pregnancy rates and GP referrals, and monitoring of Accident and Emergency service usage. A further ESRC co-funded KTP with Local Futures Group Ltd focused on the development of participatory mapping technologies, complementing work supported by a 2010-2013 ESRC Impact Award and undertaken in collaboration with ESRI (UK) Ltd. The KTP with Local Futures Group created an operational online decision support system that leverages added value from geographic information in local decision-making; it is widely used by local authorities and third sector organisations. Longley is academic coordinator of the ESRC's Retail Research Data Initiative, linking 15 major UK retailers in a nationwide research training initiative. Maslin and Disney have a £1.2M Technology Strategy Board award with DMC International Imaging company to develop a new global land carbon stock model. Maslin, with members of the UCL Institute for Sustainable Resources and KMatrix Limited, has a DECC project to design metrics for low carbon technology development in the UK economy. We have had ESRC and NERC CASE Awards with partners including: the Co-Operative Group Ltd., ESRI (UK) Ltd., English Nature, Runnymede Trust, Aquatic Engineering Ltd, London Metropolitan Police and Southwark PCT.

Working with third sector partners: Since 2004, we have hosted and managed (Burningham, Maslin) the *Thames Estuary Partnership*, a charity providing a framework for the sustainable management of the Thames estuary for users and communities. Between 2008 and 2013 the Department has, under the Leverhulme Trust *Artists-In-Residence* scheme, hosted three artists (Liz Hingley, Carolyn Deby, Benny Nilsen); their collaboration with academics has led to a series of public events, installations, performances, the CD *Londinium* (Touch, 2013), and exhibitions. We also hosted a *Writer-and-Artist in-residence programme*, sponsored by JLT Re, which included Ruth Padel, Subathra Subramaniam, Richard Hamblyn, Jean McNeil, Heather Ackroyd, Dan Harvey and David Finnigan. Gandy's AHRC funded documentary film *Liquid city* has been shown at film festivals in London, Boston, Budapest, Minneapolis and Mumbai. Ingram's *Art and War: Responses to Iraq* showcased the response by artists and art spaces to the 2003 invasion of Iraq, through an exhibition and a series of talks, workshops and panel discussions.

Capitalising on our London location to forge relationships with local museums, institutions, and multi-ethnic communities: Since 2008, Bressey, Dennis, Dwyer and Longley have worked with museums (Museum of London, London Transport Museum, Gunnersbury Park Museum, London Science Museum) on collaborative projects contributing to displays, exhibitions and secondary access. We have also successfully sought Beacons of Public Engagement funding for a wide range of community engagement work: (i) *Towers of London* (Harris, 2009) captured public interest in London's built forms and histories; (ii) *Faith and Suburbia* (Dwyer, 2012) facilitated collaboration

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with award-winning photographer Liz Hingley and six senior members of faith communities in West London; (iii) *London Art in the Jazz Age* (Bressey, 2012) staged an open day for the public to bring in artwork showing portraits of African and Asian people, with historical experts and curators to offer their expertise; (iv) the *Malaria and African Diaspora* public engagement event (Page, 2012) attracted participants from the African diaspora, specialists in malaria from the UCL Hospital for Tropical Diseases and London School of Hygiene and Tropical Medicine and the All Party Parliamentary Group on Malaria, building on ongoing collaborations with London diasporic groups. Community Participation in City Strategies (Robinson, Arabindoo and PhD students) supported public conferences and workshops with the Just Space network on the London Plan (2010, 2012).

Engaging with institutional impact initiatives: Our approach to impact has been supported by the focus in our strategy on cross-disciplinary work intended to reach and to benefit the widest possible non-academic audiences through a series of UCL-funded initiatives. To that end, we have:

1. Led major cross-disciplinary research initiatives within UCL, including founding the UCL Environment Institute (directed by Maslin, 2008-2011). Since 2008, the Institute has been instrumental in facilitating both the intra- and the extra-academic collaborations underpinning UCL's broader environmental research impacts on practices in policy, business and communities. We also led the creation of the inter-faculty UCL Urban Laboratory (directed by Gandy, 2005-2011), to share creative and critical urban research and thinking, with local communities in London, and with diverse global audiences.

2. Played executive roles in UCL Grand Challenges initiatives: (i) *Global Health*, brings together the university's diverse skills and expertise to deliver capacity-building and improvement to the health of people in the developing world (Maslin); (ii) *Sustainable Cities*, seeks to address aspects of the major problems facing cities in the 21st century (Gandy); (iii) *Intercultural Interaction* aims to examine the causes and features of social and cultural diversity, assess their implications, and devise new ways to think about them (Dwyer).

3. Taken advantage of UCL's Impact PhD Studentship scheme, which provides match-funding for projects intended to generate significant economic or societal impact. Since its launch in 2010, the Department has been at the forefront of participants in this scheme, attracting 50% or greater external funding for five Impact PhDs allowing us to nurture and/or strengthen links with external organisations including the Office for National Statistics, the Cambodia Foundation, BHP Billiton Foundation, Scottish Natural Heritage, and OTT Hydrometry Ltd.

Outreach: Staff have delivered 138 public lectures, 21 training workshops and were involved in 43 school activities, 7 exhibitions and 24 festivals. Notable activities include the Royal Institution lectures *Introduction to Climate Science* (Brierley, 2013), membership of Cheltenham Science Festival Advisory Committee (Maslin 2008-) and British Film Institute *Inview* Advisory Board (Barry, 2008-2009), and participating in the Royal Society Summer Exhibition (Longley, 2012). We have also established a formal link with the UCL Camden Academy.

Media Engagement: We have undertaken media engagement activities as a means both of contributing to media discourse about issues relating to our work and of engaging the widest possible public audience with those issues. To those ends, staff have contributed to coverage in national and international newspapers and via major UK and international TV and radio channels (>120 contacts); were series consultant on BBC *Ice Age Giants*; and wrote and presented a 13-part series on *Greece and Climate Change* for National Greek television. Media contact is encouraged and facilitated by UCL Media Relations. Staff have produced 8 short educational and outreach films. We have made increasing use of online resources, including the Departmental and Institutional webpages, Facebook, Twitter and YouTube to communicate our research activities.

Rewarding impact activities in staff appraisals and giving them due consideration in promotion applications: Throughout the census period, knowledge exchange activities were included in our criteria for academic promotion as a means of ensuring proactive engagement by our staff.

c. Strategy and plans

The Department's Impact Strategy aims to promote interaction between our researchers and potential beneficiaries of their work, and to support activities aimed at addressing major societal challenges. At the heart of this strategy are specific measures designed to increase the impact of current and future research and the range of beneficiaries by maintaining and building upon our successful approaches since 2008. These include the following:

1. *Incentivise staff by continuing to encourage consultancy and reward impact activities.* Over the

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next assessment period, we intend to strengthen our impact culture by: (i) making provision for impact activities in our workload model; (ii) providing administrative resources for consultancy and commissioned research with a view to ensuring that at least 50% of academic staff engage with users; (iii) organising seminars and workshops using in-house consultancies on best practice; (iv) extending 'practice networks' by encouraging younger staff to participate in impact-related activities undertaken by more senior staff; and (v) documenting impact activities in all staff web entries.

2. *Continue to support research groups and their consultancy activities*, whose work lends itself to, and whose objectives include, the delivery of non-academic impact. For example, ECRC-ENSIS have been central to the creation of the new Defra Upland Waters Monitoring Network, which in 2013 replaced the Acid Waters Monitoring Network. ECRC-ENSIS will continue to manage the Network, with an expanded remit to monitor and undertake original research on toxic pollutants, nitrogen and climate change (as well as acidity and recovery).

3. *Designate a new Departmental Impact Coordinator* from 2014 with a remit to identify and advise on future impact growth areas in collaboration with heads of research clusters. This role will be combined with that of existing Knowledge Transfer and Enterprise Liaison.

4. *Use NERC Impact Accelerator (IA) funding*. We secured IA funding (French, 2013) to explore new pathways to impact for NERC science, with reference to the 'embedded stakeholder' model used to integrate EA into the NERC iCOASST project. We envisage wider adoption of this model by RCUK. Phase 2 funding (French, 2014) will improve the interaction between NERC researchers working on geohazards, energy security and renewable energy and the business sector.

5. *Continue and expand engagement with UCL cross-disciplinary initiatives*. We intend to assume key roles in new initiatives (e.g. Institute of the Americas, Amazonas, Carbon and Climate Governance). We will target a minimum two awards per year from UCL's Impact PhD Studentship scheme.

6. *Maintain and expand engagement with industry, government and communities* through UCL's existing collaborations (e.g. Technology Strategy Board and Catapult Centres) and secondment of UCL researchers to Government departments (such as Milner's 2013-2014 secondment to Defra's Chief Scientific Advisor), and through Beacons of Public Engagement.

7. *Enhance open access to research findings*. Access to research findings is currently undergoing a paradigm shift. We intend to set up a 'Geography Open Broadcast' focused especially around the online provision of free podcasts and other resources aimed at schools and the general public.

While we expect these measures to lead to a variety of new impacts over the next assessment period, we also intend to develop ongoing projects to ensure that they reach their full potential. We have already identified a number of case studies (e.g. on Upland Waters; Coastal Systems; Housing, Poverty and Security) that show future potential and will closely monitor these and provide mentoring and support towards their fullest possible development.

d. Relationship to case studies

Both UCL17B-MAC and UCL17B-ROS exemplify our support for research groups reporting and providing data to meet the UK's international obligations, and raising public awareness of and participation in freshwater science. The benefits deriving from the underpinning research by the ECRC stemmed directly from Departmental investment in that group itself and in world-class laboratory analytical facilities, and from support for ENSIS.

UCL17B-DIS exemplifies our strategy of encouraging commissioned research in partnership with industry and government, together with major investment in high-performance computing facilities. This was instrumental in allowing our Earth Observation group to achieve global impacts within the major space agencies (NASA, ESA) and remote sensing industry with their ground-breaking methods and innovative satellite data products.

Impacts described in UCL17B-LON arose from our enthusiastic engagement with the KTP scheme, which led to two KTP awards that laid the foundations for the research. The impacts arising from this research were also underpinned by the Department's commitment to cross-disciplinary collaboration, in this case with geneticists and funding from the Wellcome Trust.

UCL17B-BRE exemplifies our use of London as a centre of networks and sustaining close links with the Museum through follow-up events and secondary access.