

Institution: Queen Mary University of London (QMUL)

Unit of Assessment: C17 (Geography, Environmental Studies and Archaeology)

a. Overview

Building on the strengths that achieved a rank of joint-first in RAE2008, the School of Geography at QMUL has continued to enhance its international research excellence through high profile research outputs and substantial increases in grant income and postgraduate research students (PGRs). Taking place within QMUL's Faculty of Humanities and Social Sciences (HSS), research is overseen by the Vice Principal, a Dean for Research who holds two meetings a semester with School Directors of Research (DoR) on cross-Faculty research issues and strategic priorities, and a Deputy Dean who is responsible for PGRs. Geography's DoR chairs the School's Research Committee (RC) which develops and implements the School's research strategy, supports and monitors research activity, and manages the Graduate School. The RC reports to the School Management Group and the School Board (chair: Head of School (HoS)), and includes research theme convenors, research centre directors, the Director of Graduate Studies (DGS) and PGR representatives. Research is pursued through *four research themes* and *five research centres*.

b. Research strategy

The School's overarching strategic aim is to sustain and enhance its research excellence and the supportive and stimulating research culture from which that grows. The School's *Research Strategy 2010-2015* dovetails with the research objectives in the *QMUL Strategic Plan 2010-15* and *QMUL Research Strategy 2012-2015*. The achievement of strategic research objectives is monitored via (i) the DoR and Research Committee, reporting to the HoS and School Board and (ii) QMUL's annual Planning and Accountability Review, which evaluates progress against key performance indicators set out in the *QMUL Strategic Plan, 2010-15*.

The *strategic objectives* set out in 2008 were to: (i) increase the intellectual contributions the School makes to international research agendas across and beyond the discipline; (ii) produce research that has significant impact beyond the academy; (iii) increase external research grant income to support this work; (iv) expand the number of post-doctoral research associates (PDRAs) and research students (PGRs) working within the School; (v) develop the work of three established research centres and to launch two new centres to enable the strategic development of research; (vi) enhance the School's research infrastructure; and (vii) ensure collaborative and collegiate ways of working within the School and with partners.

Strategic achievements during the REF period since 2008 include (i) major outputs (seven monographs; more than 200 papers in leading journals) that demonstrate international research leadership; (ii) an 80% increase in total external research grant *awards* (£7.93m compared to £4.4m in RAE2008); (iii) a 56% increase in total external research grant *expenditure* (£4.61m (REF4b) compared to £2.96m in RAE2008); (iv) a 65% increase in PhDs awarded (42.97 PhDs compared to 26 in RAE2008); (v) a 39% growth of the Graduate School (46.5 FTE PGRs in 2013 compared to 33.5 in 2008); (vi) the employment of 23.3 FTE PDRAs/Research Fellows; (vii) capital investment in the School of £3.2m including £516k CIF and £304k SRIF investment in research infrastructure; (viii) the launch of two new inter-disciplinary research centres: *The Centre for Studies of Home* and *The Centre for Global Security and Development*; and (ix) significant research impact via existing and new research partnerships (see REF3a).

Current strategic objectives are to: (i) continue setting international research agendas within and beyond Geography in the areas identified by each research theme; (ii) increase external research grant income and funding for PGRs through strategic collaborations; (iii) further develop the quality of research outputs through enhanced mentoring and peer review; (iv) build and consolidate our external research partnerships; (v) continue to implement our impact strategy (see REF3a); and (vi) ensure that all RCUK funded research is compliant with its Open Access policy. These will be incorporated into the *School Research Strategy, 2015-20*.

The four *research themes* in the School lead international research agendas and define future priorities within the overall strategy. Co-ordinated by a senior member of staff, they bring together senior, mid and early career staff, PDRAs and PGRs, develop collaborative research, and can apply for School funding of £5k pa to develop research initiatives and enhance the impact of research. The research themes operate as constellations of interest rather than autonomous groupings, and some staff are aligned with more than one theme. The five *research centres* enable

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(via technical resources, physical space and conceptual networks) cross-theme, multidisciplinary and outward-facing engagements to pursue directed research agendas. Led by directors and overseen by the Research Committee, the centres report to, and receive pump-priming funding from, the Faculty's Dean for Research. Underpinning these activities is a long-established and highly-valued research culture for staff, PDRAs and PGRs which is inclusive, collegial, collaborative and engaged. Taken together, the research themes and centres at QMUL make a distinctive and long-standing contribution to international geographical scholarship through recognised expertise in cultural spatial politics, the social analysis of economic change, health and the biosciences, and the analysis of multi-scalar earth surface processes, as well as the strategic exploration of cross-theme research interests.

Research themes and centres

i) **Culture, Space and Power (CSP)** conducts theoretical and empirical research into the spatial politics of cultural practices in a range of historical and geographical settings. Research has strong interdisciplinary links and involves external collaboration with organizations beyond the academy. The group's research has shaped international debates on:

a) *Global geographies of knowledge and practice*. The geographies of global connections was identified as a key research area in RAE2008. Major research outputs since then have worked at a global or planetary scale to demonstrate the significance of global or globalising practices, and planetary ways of knowing, for imperial and post-imperial political and economic orders; the production, organisation and translation of medical knowledge past and present; and for knowledges, narratives and aesthetics of environmental and climatic change (**Ogborn, Reid-Henry, Reubi, Holden, Yusoff**). A key focus of future work will be the intersections between culture, politics and knowledge in making new global geographies in relation to early modern orality and early modern natural history (**Ogborn**, AHRC CDA with Natural History Museum, £60k), humanitarianism and development (Philip Leverhulme Prize **Reid-Henry** £70k) and ideas of 'geologic life' (**Yusoff**).

b) *Home and relatedness* - identified as a key research area in RAE2008 - has demonstrated the cultural and political significance of ideas and practices of belonging, origins and movement for diasporic populations and within accounts of human genetic diversity at different scales (**Blunt, Nash**), and by examining the intimate geographies of home past and present (**Blunt, Owens**). This has been underpinned by funding from AHRC (Living in Victorian London, £61k **Owens**) and Leverhulme (Diaspora Cities, £143k **Blunt**). Strategic development through The Centre for Studies of Home includes research on the home as a site of popular historical knowledge and practice (Living with the Past at Home, AHRC £292k **Nash, Blunt, Owens**), on home 'unmaking' (Leverhulme EC Fellowship, £69k **Baxter**), and on home-work relationships c18th to the present (three AHRC CDAs £182k **Blunt, James, Owens**). Future work will extend research on relatedness through a focus on human and animal family histories and on children, animal breeding and care (**Nash**).

c) *Urban cultural politics*. Research since 2008 has demonstrated how cities are spaces of possibility, creativity and identity formation through (i) investigations of utopianism, mobile urbanism and artistic spatial practices (**Pinder**); (ii) the city as a site of diasporic identity (**Blunt** Diaspora Cities, Leverhulme £143k); and (iii) work on cities, communities and philanthropy (**Blunt, Owens**) including settlement houses, Dr Barnardo's (AHRC CDA with the Ragged School Museum £60k, with **Brown**) and urban corporate social philanthropy (QMUL Centre for Public Engagement £10k, with **Mcllwaine, Wills**). Research has involved collaboration with English and Drama (including two joint PhDs and AHRC CDA with the National Maritime Museum on Imperial Thames, £60k), with QMUL's Media and Arts Technology Programme and Business and Management (three ESRC PhDs on 'Digital Technologies and the City'), and knowledge transfer projects on gender and the built environment via the London Women and Planning Forum (**Blunt** CI with Women's Design Service, funded by Urban Buzz £127k). Future work will focus on artistic and creative ways of knowing the urban (**Pinder**) and on home and the city (**Blunt**).

The three sub-themes are connected by the AHRC CDA programme with the V&A Museum of Childhood (three studentships, £182k) *The Child in the World* (**Blunt, Ogborn, Owens**) on the global connections of London childhoods. Building on this, and on our wider practices of public engagement, the major research agenda across CSP for the next five years will involve examining the role of collaboration and creativity in the production of geographical knowledge.

ii) **Economy, Development and Social Justice (EDSJ)** challenges traditional sub-disciplinary and geographical boundaries by examining the interrelations between economy, development and social justice through the insights of political economy, social geography and a hybrid economic/development geography. Innovative, collaborative work with external organisations has shaped the trajectory of this work. Research on:

a) the geographies of *production, investment and uneven development* has demonstrated how the economic fortunes of British men and women in the c19th were bound into global patterns of investment and exchange (**Owens**, CI ESRC, KCL, £250k) and the importance of the embedding of production networks to provide for resilience in the context of global trade liberalisation and EU enlargement (**Smith**, US National Science Foundation \$247k). Work is being taken forward through research on the accumulation of wealth in different territories in the British Empire (**Owens**, BA £5k), intergenerational wealth transfers, state regulation and inequality in c19th and c20th Britain (**Owens**, CI Philomaphia Foundation and Isaac Newton Trust, Cambridge, £109k), the externalisation of the EU economy through free trade agreements and global production networks in contemporary North Africa, and the consequences of trade and economic integration for economic (in)security (**Smith**, BA £9k);

b) the *changing politics of work and labour relations* in the global North and South has championed a new hybrid economic/development geography and brought the concerns of economic and political geography closer together. This has been done via research that demonstrates how workplace relations help reproduce 'everyday peace' in Northern India (**Williams** BA £7.5k), the economic outcomes of work-life (im)balance for IT workers and firms in Ireland and the UK (**James**, ESRC £17k), the potential for transferring UK call centre labour organising models to India (**James**, Nuffield Foundation £11k, Cambridge), analyses of the impact of sub-contracting on new forms of labour organising in London's low wage economy (**Wills**, ESRC £85k), and the emergence of a new migrant division of labour in that economy (**Datta, May, Mcllwaine, Wills**, ESRC 2005-7 £240k). On-going research examines the development and impact of the living wage (**Wills**, Trust for London, £70k), and the prospects for socially inclusive growth in India's new service economy (**James, Williams** £12k Cambridge Humanities Research Grant, Cambridge);

c) *transnational migration and integration processes* has highlighted the 'connectivity' within and across transnational and diasporic communities (**Mcllwaine, Blunt**, AHRC £36k) and the creation of local and transnational socio-economic and political practices developed to cope with marginalisation and financial exclusion (**Mcllwaine**, Trust For London £56k, BA £7k; **Datta**, Friends Provident Foundation, £70k; ESRC-CASE, £45k, London Citizens, £4k). New research analyses migrants' philanthropic networks in post-recessionary UK (**Datta, James** QMUL £4k), corporate philanthropy in east London (**Mcllwaine, Wills, Blunt, Owens** QMUL Centre for Public Engagement, £10k) and the negotiation and subversion of transnational citizenship amongst Indians in India and the UK (**Williams**, RGS-IBG £3k);

d) *neoliberalism, politics and resistance* has examined new forms of political organisation, and the alternative values and practices resisting and reshaping neoliberalisation. Work charts the 'domestication' of neoliberal economic reform by households in East-Central Europe (**Smith**, ESRC £133k), the re-working of neoliberal welfare reform by UK 3rd sector homeless service organisations (**May**, ESRC £124k), new forms of broad-based community organising (**Wills**, ESRC, £85K) and how music can make and sustain new forms of community in east London (**Wills**, Creativeworks London, £15K). This is being taken forward through work exploring the rationale, development and impact of the UK government's localism agenda on local political action (**Wills**, Leverhulme £158k) and new forms of 'post-secular' political praxis (**May**).

Building on our integration of economic, development and social geography, the major research agenda across EDSJ for 2014-20 will examine wealth and inequality, uneven economic integration, new forms of political identity and mobilisation, and the prospects for socially inclusive growth.

iii) **Health, Security and Biosciences (HSB)** is the strategic reconfiguration of the former 'Health, Place and Society' theme. It has strong interdisciplinary links within and beyond QMUL and with health service providers at all levels. One of the largest and most distinctive groups of geographers in this research area, HSB applies innovative methodologies, fosters forward-looking research agendas and engages with the public and policy-makers. Collaborative work includes 'Bodies across Borders: the global circulation of bodily commodities, patients and medical professionals,' a 2010 symposium for theme members, international scholars and policy-makers on the impacts of

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bioscience and global health and security (**Brown, Dyck, Greenhough**, Brocher Foundation CHF2k). Research focuses on:

a) *Health, place and population*, which has (i) informed health care priority setting through innovative work in spatial demography and small-area estimation of health outcomes and in developing the use of GIS to visualize data (**Congdon**, NHS (Outer NE London) £88k; GRO Scotland, £8k; D. Smith, MRC Fellowship £254k; QMUL £9.8k; ESRC CASE and Open Studentships £120k); (ii) pioneered visual methodologies to analyze relationships between place and the health practices of migrants, contributing to health promotion interventions and health care access, including an educational DVD (**Dyck**, Leverhulme £103k); and (iii) developed critical understanding of c19th public health in London through analysis of environmental interventions (**Brown**, Wellcome Trust £3.3k). This will be extended via future research on healthcare priorities and interventions, both past and present, including the evaluation of cancer prevention schemes targeted at black women in the City and Hackney (**Greenhough, Dyck**, Barts Charity £182k) and an analysis of the environmental and health-related practices at Dr Barnardo's in c19th east London (**Brown, Owens**, QMUL Centre for the Study of Migration £2.9k; AHRC CDA £60k);

b) *Global health and security*, which (i) examines how discourses of global health and security are opposed and resisted (**Reid-Henry**, Yale Univ. US\$7k); (ii) analyses the interaction between food security and global health security discourses (Brown SSHRC C\$39k); (iii) critically assesses the rise and impact of global health governance using the example of the international tobacco control movement (**Reubi**, Wellcome Trust £9k). Future work will examine the export of western approaches to healthcare and facilitate a cross-disciplinary analysis of the intersection of geographies of global health and development. Research will examine approaches to the management of non-communicable diseases in Africa (**Reubi**, Wellcome Fellowship £220k; **Reubi, Brown** CIs ESRC £30k); the humanitarian interventions made by organisations such as Médecins Sans Frontières and the Red Cross (**Reid-Henry**, including collaboration with Peace Research Institute) and the implementation of evidence-based practice in global health policy making (**Brown, Reubi**, ESRC studentship £60k);

c) *Geographies of bioscience and bioethics*. Engaging critically with the social and cultural impacts of the biosciences, research has (i) shown how novel human-viral ecologies are generated through scientific research and explored the idea of clinical trials as a 'social good' through a historical case study of the MRC's Common Cold Unit (**Greenhough**); (ii) examined how ideas of human difference and relatedness are evoked and reworked within human population genetics and genetic genealogy (**Nash** ESRC 2004-6 £160k); and (iii) analysed the development of bioethics and the biosciences in the UK, Singapore (**Reubi**, Brocher Foundation £10k) and Uganda (**Holden**, in collaboration with the UK Parliamentary Office of Science and Technology Africa Programme). Future work will focus on applied bioethics by examining (i) the care work of laboratory animal technicians (**Greenhough**, Wellcome Trust £4.6k) and (ii) the collection, circulation and return of biological materials for use in medical research (**Greenhough, Nash**, AHRC CDA £60k with the Royal College of Surgeons).

The major research agenda across HSB for 2014-20 is to examine and inform healthcare priorities, policy, practice and research, assessing how these are shaped by innovations in the biosciences and emerging global health and security agendas.

The Human Geography research themes pursue elements of their agendas via three research centres: (i) **The Centre for Studies of Home** (est. 2011. Dirs: **Blunt** and E. John, Geffrye), a formal partnership between QMUL and The Geffrye Museum of the Home. It is an international hub of research, knowledge exchange and public engagement activities on past and present homes. Initiated by £10k from QM Innovations, it has generated over £770k total external grant income (for Geography: 'Living with the past at home,' AHRC £292k **Nash, Blunt, Owens**; Leverhulme EC Fellowship £69k Baxter; three AHRC CDA studentships on 'Home-work' £182k **Blunt, James, Owens**; one ESRC studentship £60k **Blunt, Nash**). Regular activities include a monthly IHR seminar series, conferences, KE workshops, postgraduate study days and an annual lecture. Strategic priorities include the development of three exhibitions at the Geffrye, learning resources, and collaborative research on home, the city and digital technologies; (ii) **The City Centre: Researching City Lives and Connections** (est. 2006. Dir.: **Pinder**) provides a physical and conceptual space where the School's urban research is developed collaboratively within and beyond the academy. Relationships with local and international partners produce engaged and

high impact research on new forms of urban politics and a living wage (London Citizens); gender and the built environment (London Women and Planning Forum); migration and Latin American communities in London (Trust for London and Latin American Women's Rights Service); philanthropy in east London (QMUL Centre for Public Engagement and Centre for the Study of Migration); community, place and music (Spitalfields Music, funded by AHRC Creativeworks London); and digital technologies and the city (TechCity and QMUL). The Centre enables cross-disciplinary collaboration within QMUL, including with Drama (two joint PhDs), the Media and Arts Technology Programme and Business and Management (three ESRC multidisciplinary PhDs); (iii) **The Centre for Global Security and Development** (est. 2010 by Geography, Politics and IR, and Business and Management. Founding Dir.: **Reid-Henry**, current Dir.: D. Williams, Politics) provides a novel space for research and dialogue between members of the participating schools on economic, political and health/food security and development. The Centre runs a seminar series, discussion groups and a public lecture. Members supervise two joint Centre PhD studentships.

iv) **Earth Surface Science (ESS)** investigates the responses of landscapes to the interacting chemical, physical, biological and human processes that drive their dynamics from event to geological timescales. Since RAE2008, Physical Geography research has expanded and reconfigured into a single theme, incorporating the expertise of five new academic staff. ESS integrates global-scale driving forces with micro-scale process mechanics to generate unique insights into the form, structure, feedbacks and resilience of landscapes. Research focuses on three overarching questions:

a) *What processes drive the dynamics and co-evolution of rivers and their ecosystems?* Our agenda-setting research has demonstrated the two-way nature of the feedbacks between the physical and biological processes that explain the complex dynamics of river systems. Building on existing strengths (**Wharton**), research capacity has grown rapidly with appointments (**Brasington, Gurnell, Harvey, Henshaw**) since 2008. Our research has attracted over £1.1m from principal research funders (NERC, Leverhulme Trust, EU FP7) whilst also enhancing the scientific basis for sustainable river management through: collaborative research with the EA, CEH and environmental charities; leadership of the River Restoration Centre (**Wharton**); and NERC Industrial Case awards (**Brasington**; £70k to Aberystwyth). Key research highlights in the REF period include new methods to quantify the structure and dynamics of braided rivers over event (**Brasington** NERC £455k ReesScan project at Aberystwyth) and decadal timescales (**Gurnell**, Leverhulme, £147k); innovative conceptual models of the interactions and feedbacks between aquatic biota, fluvial processes and morphodynamics (**Gurnell, Harvey, Wharton**; NERC, £224k; EU FP7; £280k); and the development of numerical methods to predict the response of river systems to land-use change and simulate flood hazards (**Brasington, Henshaw**).

b) *What controls biogeochemical processes and dynamics in aquatic and wetland systems?* Our research examines how macronutrient (C, N, P) and contaminant cycles interact with biological, physical and anthropogenic drivers in freshwater and estuarine systems. Research leadership is demonstrated by the award of a NERC Consortium grant (**Heppell** £413k) to coordinate interdisciplinary research on macronutrient cycling in lowland catchments; externally-funded research on nitrogen cycling in rivers (**Heppell**, NERC £141k) and carbon cycling in peatlands (**Belyea**, NERC £299k; **Heppell**, Defra £34k); and commissioned research on sediment and contaminant behaviour in rivers and estuaries (**Spencer**, HR Wallingford £29k; EA £87k; Defra £55k). We work with national and international partners and end-users to better understand the impacts of future sea-level rise on coastal assets (**Spencer**, NERC/Arcadis £80k) and ecosystems (**Belyea**, NERC/Broads Authority £96k) and to inform sediment management practices (**Spencer**, SOGREAH €12k). Highlights include: insights into the physical-biological feedbacks controlling peatland dynamics (**Belyea**); quantitative models of nutrient cycling in groundwater and surface water systems (**Heppell**); and the development of novel geochemical tracers to quantify cohesive sediment and contaminant fluxes (**Spencer**).

c) *What can geo-archives reveal about patterns and processes of environmental change?* Our research interrogates evidence of environmental change through multiple approaches at microscopic to landscape scales. Research spans the Quaternary from the earliest evidence of humans in Britain and palaeoenvironmental applications of ostracods, to glacier-climate interactions, contemporary glacier mass balance and sedimentary products. This work is enhanced by collaborations that provide access to unique geological datasets (**Carr**, BGS £35k) and

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nationally-significant archaeological collections (**Lewis**, AHRC CDA with the British Museum £78k), support the development of global ostracod databases (**Horne**, EU FP7 €38k) and engage with the public (**Lewis**, English Heritage £8k). Research highlights include: establishing the environmental context for the dispersal of the first ancient humans in Britain (**Lewis**, Leverhulme AHOB project £24k); advancing the application of ostracods for palaeoclimatic reconstruction (**Horne**); generating independent palaeoprecipitation data from mountain glacier reconstructions to constrain regional climate models (**Carr, Lukas**); extending the application of luminescence dating to proximal glacio-lacustrine sediments (**Lukas**); and novel insights into the timing and extent of Mediterranean glaciation (**Adamson**).

The research agenda of ESS is to deepen understanding of these core questions and to target the critical interfaces that conjoin physical processes, biota and macronutrient cycles, modulated by environmental change. This strategy has already enabled ESS to take a key role in establishing a major interdisciplinary EU Erasmus Mundus, Joint Doctoral Programme, SMART (Sustainable Management of Rivers and their Tidal systems: 2011-17; €1,658k). This initiative, which will fund over 40 doctoral research projects, forges a unique partnership between ESS, ecologists and biochemists at the Freie Universität/IGB in Berlin, and environmental engineers at the University of Trento. The appointments of Brasington and Henshaw reinforce this strategy with expertise in geomatics and numerical modelling that enables quantitative insights into the spatial and temporal dynamics of landscapes. ESS has a funded research horizon that facilitates this agenda well into the next REF period (eg EC FP7 REFORM project, 2011-15; DEFRA Lowland peatland systems, 2011-14; NERC Macronutrients, 2012-15).

ESS research is supported through the outstanding SRIF 3/CIF funded interdisciplinary research facilities provided by (i) **The Centre for Micromorphology** (est. 2006. Dir.: **Carr**), a joint initiative with the Faculty of Medicine and Dentistry and the School of Engineering and Material Science (SEMS) at QMUL and the Department of Geography, RHUL. The Centre's world-class facilities (see section (d)) have facilitated novel interdisciplinary collaborations with material scientists (**Carr, Spencer** and Bushby (SEMS) EPSRC £80k to SEMS) and are being used to develop the application of 3D-tomography to investigate the behaviour of microfibrils and subglacial sediments; and (ii) **The Centre for Aquatic and Terrestrial Environments** (est. 2006. Dir.: **Heppell**), a collaboration with the School of Biological and Chemical Sciences at QMUL, which provides advanced analytical and field equipment. These facilities enable us to improve understanding of the material flows and macronutrient cycles within the Earth's surface systems, including: (i) hydrological controls on nutrient cycling and greenhouse gas fluxes at the land-air-water interface; and (ii) the interplay between hydrogeomorphic and biogeochemical processes essential to the delivery of ecosystem services. The Centre's facilities support collaborative research with external partners including the RSPB, Environment Agency, Medway Ports Authority and GEODE, enabling knowledge exchange and dissemination.

The collaborative and interactive **research culture** of the School is fostered through research theme meetings; regular research centre management and strategy meetings; a weekly research seminar series; the annual David M. Smith lecture (Chatterjee (Columbia), O'Neill (Cambridge), Harvey (CUNY), Peck (UBC), Cloke (Exeter), Parnell (Cape Town)); visiting scholar initiatives, including a sabbatical scheme (Jones III (Arizona); Jenkins (York, Canada); Legg (Nottingham); Saldanha (Minnesota)), and a distinguished international scholar programme (Katz (CUNY); Roulet (McGill); Amin (Durham); Oerlmans (Utrecht); Pratt (UBC)); a regular Research Frameworks in Human Geography discussion group with key scholars (eg Massey, Harvey, Katz, Marston). The School also hosts leading scholars through QMUL's Distinguished Visiting Fellows programme (eg Larner (Bristol); Marston (Arizona); Elden (Durham); A. Murphy (Oregon); Chattopadhyay (UC Santa Barbara); Larsen (Roskilde), England (Washington), Morin (Bucknell), J. Murphy (Clark)).

Research activities are supported by the School's Research and Teaching Officer (RTO) (1FTE) who provides targeted information on grant opportunities, supports grant applications, administers awards and co-ordinates research-related events and visitors. The HoS, DoR and DGS manage funds for academic staff and PG research activity (increased to £900 pa per academic since 2008; £6k pa shared among PGRs), a dedicated fund for conference attendance of post-doctoral staff (£1.5k), funds for research visitors and events (£5.5k) and School research theme funds (£5k).

c. People, including:

i. Staffing strategy and staff development

Between RAE2008 and REF2014 the School of Geography has had a strong continuity in staffing which has underpinned its cohesive research themes, collegiate culture and effective collaborations. Proleptic replacements (pre-2008) for retirements (four staff) and redeployments (Ogden to VP), and the small number of staff joining other HEIs (three since 2008: Baird to Leeds, Parry to KCL, Cummins to LSHTM), has meant that research has not been disrupted by significant staffing changes. New appointments since RAE2008 have been central to meeting the School's strategic research objectives. Two chair-level appointments in Physical Geography (**Gurnell** (Kings), **Brasington** (Canterbury, NZ)) have provided research leadership and underpinned growth and consolidation into a single Earth Surface Science research theme. Five permanent appointments (four Lectureships; one SL) have strengthened each of the research themes in key areas: **Harvey** (Nottingham) and **Henshaw** (PDRA, QMUL): water-sediment and ecosystem dynamics; **Brown** (Loughborough): health geography; **Williams** (Cambridge): economic/political geography; and **Yusoff** (Lancaster): cultural/environmental geography. Research is supported by 3FTE laboratory and field technicians and 1FTE cartographer, and by the RTO as part of an administrative team of 5FTE. The School has a relatively young staff structure, but the large majority are well established at QMUL and more than one-third hold leadership positions (12 chairs out of 33 staff in the UoA). The gender balance is 50/50 for all staff and for chairs (17 female and 16 male staff in the UoA, of whom six of each are chairs). EO policies are followed in all appointment and promotion processes. Promotions have rewarded research performance and leadership (2008-: **Horne, McIlwaine** to Chairs; **Belyea, Datta, Heppell, James, Lewis, Owens, Reid-Henry, Spencer** to Readerships; **Brown, Greenhough, Lukas** to SL). Strategic use of fixed-term contracts (4FTE, 2013-14) enable planned periods of part-time working, Faculty and College leadership roles (eg **Smith** as incoming Dean of Research; **May** as Deputy Dean), and externally-funded research fellowships. Those employed (including **Adamson, Holden, Reubi**) are full and active members of the School's research community. With other early career staff, they take a PGCAP course within a probation scheme that sets achievable and appropriate research objectives, supported by senior staff mentors. QMUL's commitment to the Concordat to Support the Career Development of Researchers is pursued by a Concordat Implementation Group led by the VP for Research following the QMUL Concordat Implementation Plan (2011). All staff undertake annual appraisal to monitor and set research objectives with an appropriate senior staff member. Administrative and teaching workloads are agreed between HoS, mentors and ECRs to support their research strategy. From 2013 a new QMUL appraisal scheme will facilitate mentoring throughout the year for all staff. Support for career development and skills training is provided by the College Centre for Academic and Professional Development. QMUL operates a full sabbatical scheme (one term or year in seven) open to all by application.

ii. Research students

Geography's Graduate School has attracted a total of **73** FTE PGRs since 2008, with completions increasing by 65% from 26 in RAE2008 to **42.97** in the REF period. The Graduate School has grown by 39% from 33.5 FTEs in 2008 to **46.5** FTEs in 2013. 95% of PGRs have fully-funded studentships from prestigious external and QMUL sources (**70** new awards during the REF period). The School has held ESRC recognition since 2001; is a key member of QMUL-Goldsmith's ESRC Doctoral Training Centre (DTC); has a NERC algorithm; was part of the QMUL AHRC Block Grant; and has 15 fully-funded studentships through the Erasmus Mundus Doctoral Training Programme (2011-16). Since RAE2008 the School has attracted **48** new *external studentships*: 17.5 ESRC (five Quota; three CASE; 9.5 DTC), 11.5 AHRC (10.5 CDA studentships; one BG); nine Erasmus Mundus; nine NERC (six Algorithm; two CASE; one ESRC/NERC); and one funded by the Environment Agency. The School has also been awarded **22** competitive *QMUL studentships* since 2008, including one joint with the British Geological Survey. Success in attracting studentships is underpinned by (i) the School's research training and supervisory system; (ii) cross-disciplinary initiatives at QMUL and (iii) collaborations with external partners. Joint supervision means that the majority of staff supervise PhD students, and all receive training through the Faculty Doctoral College. The selection, induction and training needs of PGRs are co-ordinated and overseen by a DoGS (supported by a Deputy and 0.5 FTE PG administrator), who reports to the Research Committee and Faculty's Deputy Dean (PG Research). Training and employability skills are delivered by the School, Doctoral College, DTC and the Centre for

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Academic and Professional Development according to a points-based system which follows the *Vitae Research Development Statement*. Specialist training is also provided by collaborative partners. PGRs receive a personal Research Training Support Grant, with access to the School's PG Training Events Fund and QMUL's PG Research Fund. All PGRs have desk/computing space in dedicated offices and full access to School research facilities.

PGRs are central to the School's vibrant research culture. They are integrated into research themes, organize and participate in research events, and are represented on the Graduate Studies and Research Committees. Training is provided on academic publishing and applying for academic posts, reflecting the School's concern to contribute to the future vitality of the discipline. PGR research excellence is evident in the volume of high-quality publications and the numbers moving to academic posts. Since RAE2008, PGRs have published four books (Bermudez Torres; Hardy; Nightingale; Sheringham), 19 book chapters and 45 papers (eg in *Transactions, Annals AAG, EPD, Political Geography, Antipode, Social Science and Medicine, and Geology*) solely or with collaborators other than their supervisors, and five book chapters and 34 papers (eg in *EPA, Urban Studies, Earth Science Reviews, Quaternary Science Reviews, Jnl. of Ecology, Freshwater Biology, Soils and Sediments, and Environmental Pollution*) with their supervisor(s). Seven have moved to lectureships (at Brighton, Exeter, Leeds, Liverpool, Nottingham, Hamburg, Newcastle), and 16 to postdoctoral research positions (including KCL, UCL, RHUL, Cambridge, Cardiff, Glasgow, Leeds, LSHTM, McMaster, New Delhi, Oxford, OU, Uppsala).

d. Income, infrastructure and facilities

The School has received **£7.93m** research income since 2008: an 80% increase from £4.4m in RAE2008. Total research grant expenditure has increased by 56% at **£4.61m** compared to £2.96m in RAE2008. Major grants awarded pre-2008 have produced high-profile outputs in the REF period (eg Wills, Datta, May, McIlwaine *Global Cities at Work*, ESRC £240k, Nash ESRC Fellowship £160k, May *Homeless Places*, ESRC £124k, Smith *Social exclusion, spaces of household economic practice and post-socialism* ESRC £222k). Major grants since 2008 include: *Healthy Towns* (£825k NIHR), *OriEL* (Olympic regeneration in East London, £865k NIHR), *Biogeomorphology and Riparian Systems* (£146k Leverhulme), *Migrants' Health* (£103k Leverhulme), *Physical Ecosystem Engineering* (£224k NERC), *Restoring Rivers for Effective Catchment Management* (REFORM, €400k, EC FP7), *Science for Management of Rivers and their Tidal Systems* (SMART, €1.658k, EC Erasmus Mundus), *The Child in the World* (£181k AHRC), *Living with the Past at Home* (£292k AHRC) and *Home-work* (£182k AHRC). School members have been awarded prestigious fellowships: NIHR Senior Fellow (Cummins, £558k), MRC Fellow (D. Smith, £254k), Wellcome Trust Fellowship (Reubi £220k), Leverhulme Major Fellowship (Wills, £158k), and Leverhulme EC Fellowship (Baxter, £69k).

The School's full-time Research and Teaching Officer liaises with (i) the QMUL Joint Research Management Office, which provides grant costings, specialist advice (including an EU Section), contracts and negotiations, and impact statement mentoring, and (ii) QM Innovation (QMI) which supports partnerships with non-HEIs. Cross-College research grant activity is monitored by the VP for Research and Faculty Deans for Research, to whom the HoS and DoR report.

QMUL provides high-class library and IT research resources. The School is physically integrated with staff and PGR offices, seminar rooms, a suite of laboratories and IT facilities. The City Centre provides office space for staff and visitors, high-end graphical computing and video-conferencing facilities. The School's laboratories and equipment pool (£516k CIF; £249k planned investment, 2014) underpin inter-disciplinary work in the ESS research theme, the Centre for Aquatic and Terrestrial Environments and the Centre for Micromorphology. The laboratories offer outstanding facilities for the analysis of sediments, soils and water, including trace metal and ion analysis by ICP-OES and Dionex, laser diffraction particle size analysis, C and N by HiPerTOC/TN_b and multiple environmental chambers. CfM hosts a scanning electron microscope and a 3D X-ray tomograph. The new luminescence lab incorporates a TL/OSL DA-20 Reader and a portable gamma-ray spectrometer. The School's first-class field equipment pool includes a high frequency terrestrial laser scanner, robotic total station, differential GPS and an array of Doppler-based hydrometric instrumentation including mobile and fixed aDcps (S5/Argonauts) and aDVs.

e. Collaboration or contribution to the discipline or research base

A key strategic objective for the School is to build and consolidate our research partnerships (new and existing) with other academics and non-HEIs to achieve the School's research priorities. Collaborative frameworks for research (see REF3a) provide ways of working with research users

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to shape the School's ongoing and future research. Research within each theme involves: (i) collaborative research *amongst colleagues* in the School, supported by funding for joint initiatives (eg research theme funding; QMUL Centre for Public Engagement funding; QM Innovation funding); (ii) *cross-disciplinary* collaboration at QMUL, facilitated by research centres, joint projects, and joint PGR supervision (eg QMUL research network (AHRC £32k) on Pursuit of Equality and Diversity in the Economic Crisis with Law and Business and Management; 14 PGRs jointly funded and supervised with other Schools); (iii) *formal cross-institutional partnerships* to develop collaborative research, eg between QMUL and the Geffrye Museum via the Centre for Studies of Home; the QMUL strategic partnership with Warwick; and PGR training via the ESRC DTC with Goldsmiths; (iv) *UK cross-institutional research projects* eg ORiEL (NINR, £2M with LSHTM, UEL), National Evaluation of Healthy Towns (DH PRP, £1M with Cambridge, UEA, Newcastle, LSHTM; Health Needs Profiling in NE London (Barking & Dagenham and Havering PCTs, £90k); Physical Ecosystem Engineering by Riparian and Aquatic Plants with the Centre for Ecology and Hydrology (NERC £179k spent at QMUL); Reconstructing Sloane (AHRC CDA £180k with KCL); (v) *international and inter-disciplinary collaborations* eg via visiting posts (Blunt, NTNU, Norway; Brasington, Canterbury NZ; Brown, Toronto; Gurnell, Trento; May, Auckland; Mcllwaine, Universidade Estadual Paulista; Universidade Federal da Grande Dourados, Brazil; Pinder, Roskilde); the Erasmus Mundus Joint Doctoral Programme (QMUL component €1,658k) with biology at the Freie Universitat and Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB), Berlin, and environmental engineering at the Univ. of Trento, Italy; an EC FP7 programme REFORM (QMUL component €400k) led by Deltares, Netherlands, with 25 partners from 15 EU countries; and 'Geochemical control of organic matter turnover in peatlands' with Uppsala (Sweden), Newcastle and Edinburgh (NERC £299k); a COST-funded EU network on Gender and Well-Being, with partners from 24 EU countries; a BA/ACU-funded project with KCL, S. Australia, Victoria (NZ) and Lakehead (Canada) on wealth-holding and investment in the British Empire (£5k); and (vi) long-term and new *collaborative relationships with non-HEIs* developed through joint research and PGR supervision (eg School membership of London Citizens; 10.5 AHRC CDAs with museums, £630k; research with Women's Design Service funded by Urban Buzz (£127k)).

As part of the strategic objective to set international research agendas and continuing the long-standing QMUL practice of contributing to the academy, staff hold key leadership roles in the wider discipline and beyond: (i) *journal editorships*: *Transactions IBG* (Blunt 2008-12); *European Urban and Regional Studies* (Smith, Ed., 2009-, Ed.-in-Chief, 2012-); *Water Resources Research* (Brasington, 2009-); *Quaternary Newsletter* (Lukas, Ed., 2012-); *Jnl. of Historical Geography* (Ogborn editor elect, 2014); *London Jnl.* (Owens, Review Ed. and Joint Ed., 2003-10; Ogborn, Joint Ed., 2000-11); *Jnl. of Victorian Culture*, (Owens, Reviewing Ed., 2011-); *Cretaceous Research* (Horne, Assoc. Ed. 1990-2012); *South Asian Diaspora* (Blunt, Assoc. Ed. 2008-); *Geography Compass* (May, Ed., Social Geog., 2006-), *Jnl. of Soils and Sediments* (Wharton, Subject Ed. (Sediments), 2011-), *WIRES Water* (Harvey, Assoc. Ed., 2013-); *Cultural Geographies* (Pinder, Reviews Ed., 2008-12); *Env. and Planning D* (Yusoff, Reviews Ed., 2013-); (ii) *research leadership in RGS-IBG* as Trustee and Council Member (Blunt, 2012-); Economic Geog. RG (James, Sec. 2008-11); Geog. of Health RG (Brown, Sec/Treas, 2006-12); Urban Geog. RG (May, Chair, 2006-10); (iii) *research leadership on boards and committees*, eg AHOB Project Assocs (Horne, Lewis), Antipode Foundation (Wills, Director), British Assoc. for Irish Studies (Nash, Vice Chair), Cttee of Heads of Geography in HEIs (Smith, Chair elect 2014-), DEFRA Demonstration Test Catchments Advisory Group (Gurnell), ESF RESCUE Research Programme (Yusoff, working group member), Estuarine and Coastal Science Assoc. (Spencer, President elect), London Women and Planning Forum (Blunt, Chair), National Maritime Museum Trustees Collections and Research Cttee (Ogborn), QRA (Lukas, Exec. Cttee.), UK River Restoration Centre (Wharton, Dir. 2000-, Chair, 2010-12); (iv) *membership of Peer Review Colleges and assessment panels*: AHRC (Blunt, Ogborn), ESRC (May, Pinder), NERC (Belyea, incl. as Core Panel Member from 2014, Brasington, Wharton); Philip Leverhulme Prize Cttee (Gurnell, Mcllwaine, Wills); Leverhulme Major Fellowship Cttee (Blunt); and (v) as *convenors of inter-institutional seminar series*: London Group of Historical Geographers (Ogborn, 1994-); Studies of Home (Blunt, 2011-).

The research excellence of QMUL staff has achieved prestigious recognition: (i) *Academicians*: BA (Ogborn); AcSS (Blunt, Lee, May, Smith, Wills); (ii) *prizes and awards*: Philip Leverhulme Prizes (Cummins 2008, Reid-Henry 2011); Ogborn: the AAG's first Distinguished Historical Geographer (2009); Gurnell: BGS Linton Award (2012); Wills: RGS-IBG Back Award (2013).