

Institution: University of West London
Unit of Assessment: Allied Health Professions, Dentistry, Nursing and Pharmacy
<p>1. Unit context and structure, research and impact strategy</p> <p>1.1 Context</p> <p>The University of West London (UWL) is organised in six Schools and three Colleges. UoA 03 includes colleagues located mainly in the College of Nursing, Midwifery and Healthcare (CNMH) and in the newly established (2019-20) School of Biomedical Sciences (SMBS); with three colleagues from the School of Human and Social Sciences (SHSS), one from the Graduate School, and one in the London Geller College of Hospitality and Tourism (LGCHT). This UoA focuses on healthcare, mental health, and biomedical science research applied to national and international priorities. Research groups within the UoA are closely aligned to discrete areas of professional healthcare practice, biomedical science, and person-centred wellbeing with a shared aim of informing healthcare policy and practice, including through effective diagnosis, new therapies, and improved patient and carers experience. Its growth is in line with the University's last two strategic plans (<i>Ambition</i> 2013-2018 and <i>Achievement</i> 2018-2023) that gave all research units a clear steer towards growth and expansion (see institutional statement, section 2).</p> <p>1.2 Structure of the UoA</p> <p>The strategic decision (in 2017) to create a new field of biomedical science at UWL, building on existing expertise and investing into new staff and new facilities, has broadened the scope of our submission, compared to that of 2014. Of the eighteen (15.80FTE) colleagues submitted in 2021, seven were in REF14 (Gates, Lafarge, Loveday, Mafuba, Manyande, Tsiami, Wilson). The other members submitted in 2021 have joined UWL since 2014, except Brew who was then a PhD student. We are also submitting outputs from one member of health psychology staff who left in February 2019 (Barley).</p> <p>This UoA's research is focused around three broad areas – 1. patient safety and infection; and public health – 2. biomedical sciences – 3. ageing, disability and mental health. More specifically we are submitting research on infection prevention and hydration (Loveday, Wilson); biomedical sciences (Brew, Hughes, Luo, Mkrtchyan, Morgan, Tsiami); health psychology (Fox, Goerzig, Lafarge, Manyande); disability (Gates and Mafuba); and ageing and person-centred care (Loughlin, O'Malley, Rafnsson, Tischler).</p> <p>1.2.1 Research Centres</p> <p>Our main priorities for enhancing quality and breadth have led to the establishment of four new research centres related to the UoA, to supplement the long-standing Richard Wells Research Centre (RWR) whose activity originated in the 80s HIV+ context and is now well-recognised for its infection prevention research; and the West London Centre for Evidence-based Healthcare (led by Loveday and Tsiami), part of the Joanna Briggs Institute (University of Adelaide) and specialising in evidence synthesis and implementation.</p> <p>The centres created since 2014 are:</p> <ul style="list-style-type: none"> • Investments of £1.5m in laboratories and £1m in staff were approved by the University during this REF period to set-up the Biomedical Science Research Laboratory within SMBS. This group carries out research linked to critical, unmet medical and public health challenges, many of which are growing as populations age. • The Geller Institute for Ageing and Memory (IAM) is an interdisciplinary centre focusing on the well-being of people living with dementia, as of those affected by dementia as carers; and specific age-related conditions.

- The **European Institute for Person-Centred Health and Social Care**, a centre with international reach, studying the application of 'whole person care' practices.
- The **West London Food Innovation Centre (WLFIC)**, funded through a £1.4 million ERDF grant), match-funded by UWL; this is a research and development facility used as a commercial laboratory for the development of food products and for research focused on alternatives to meat products (plant-based proteins).

1.2.2 Research clusters

The research groups in this UoA are clustered around those centres. Each centre has its own focus, and all take a multidisciplinary approach with the primary strategic aim of improving public health, wellbeing, and care delivery.

The following research clusters underpin the UoA:

The **RWR** focuses on Patient Safety and Infection Prevention (led by Loveday and Wilson) and Learning Disability (Gates and Mafuba). It also includes research on health psychology (Lafarge and Fox) focused on risks / harmful behaviours, resilience, self-efficacy, and positive growth; psychosocial wellbeing in childhood and adolescence (Goerzig and Manyande); maternal wellbeing (Fox and Lafarge); health behaviours and interventions with mental health service users (Barley).

The recently established **Biomedical Science Research Laboratory** (led by Morgan) includes the following research sub-groups:

- Molecular oncology research with a strong transnational remit, on cancers that to date have no effective treatment and diagnostic pathways for early detection, including mesothelioma and glioma (Morgan).
- Antibiotic-resistance, using microbial genomics to monitor spread and understand mechanisms (Mkrtchyan).
- Musculoskeletal biomechanics (Luo) to improve the prevention of osteoporosis in ageing populations.
- Bioinformatics (Brew)

Both **IAM** and **the European Person-Centred Health and Social Care** centres work very closely with the Biomedical Science Research Laboratory on interdisciplinary projects.

- IAM is researching ageing and dementia care; including endocrine changes such as osteoporosis (led by Rafnsson with Tischler, O'Malley, Luo) and integrated medicine (Hughes).
- The European Institute for Person Centred Health and Social Care undertakes research on values-based health and social care (Loughlin)

The West London Food Innovation Centre (WLFIC) undertakes research on nutrition and food product development, sustainable diets, and behaviours towards plant base diets (Tsiami).

1.3 Research and impact strategy

Our strategy post-14 was focused on growth, based on the University's strategic direction, with the following objectives:

1. To improve staff infrastructure to support new areas of research (critically through the creation of a new research area – biomedical sciences; and by strengthening other areas, especially learning disability).
2. To develop strategies to ensure maturity, breadth, and sustainability of our research.
3. To invest in new facilities, and research infrastructures.
4. To grow our doctoral offer to ensure a sustainable pipeline of students.
5. To develop support and infrastructure for impact

Key achievements against the stated objectives:

- We have sustained existing areas of research excellence, and expanded in new directions (biomedical sciences and the health of ageing populations) to address national and international research priorities.
- We have focused on recruiting staff with outstanding research profiles (including genomics and molecular oncology) and promoting internally (for areas that were still emergent in 2014, such as bioinformatics, psychosocial health). Over the period the UoA has recruited nine new staff (mainly in the biomedical sciences); overall, sixteen new Professors/Associate Professors were appointed/promoted during the period.
- Substantive strategic investment in new research centres and research groups, and in new areas, in particular dementia care (through interdisciplinary research) and biomedical sciences (including cancer, microbiology and bioinformatics research). These investments significantly expanded the scope and reach of our research, as we built capacity towards a dynamic allied health and biomedical research profile.
- We provided a range of training and support mechanisms for research and impact, including a strong mentorship scheme. This has been supported by a generous University-wide policy for Sabbaticals, study leaves, and conference attendance described in section 2.
- We created (in 2015) doctoral programmes in Nursing (DNurs) and Midwifery Practice (DMidw), and Education and Health Science (DHSc), to meet the needs of practice-based healthcare staff who can only study part-time. In addition to our professional doctorate programmes we obtained fully-funded Vice-Chancellor's PhD scholarships (6 were awarded to this UoA over the period).
- The research carried out in this UoA feeds into our undergraduate and postgraduate curriculum with the aim of building a body of basic and translational researchers towards academic careers in infection prevention and control, holistic patient care, dementia care, biomedical science, and psychosocial health.
- We have secured funding and technical support to increase impact engagement; e.g. for our I-Hydrate online resource pack.

Our **impact case studies** build on the 2014 ICSs and are drawn from sustained research undertaken on patient safety in relation to infection and hydration. This research has focused on prevention practice; the relationship with clinical staff; and patient behaviour; and on patient care related to dehydration in care home residents. Researchers have focused on creating tools and resources including audit tools, digital applications and learning materials for use by practitioners to drive the implementation of evidence-based practice. Impact was achieved through sustained engagement with health and care sector institutions, (e.g. local NHS Trusts; NHS England; Public Health Wales; Residential and Social Care sector).

The first impact case study shows the international impact on quality standards and practice of our epic3 HCAI national guidelines, published in 2013/14, building on the contribution of previous versions of the guidelines. The second demonstrates the benefits achieved from our more recent research on resident hydration in care homes (first publications in 2018), and the development a novel evidence-based resource pack (*I-Hydrate*) available on the UWL website and used by a number of practitioners (downloaded c600 times in 2019-2020).

1.3.1 Research Strategy towards 2025

Our main objectives are to:

1. Continue to focus on our main research areas and further deploy interdisciplinary research programmes.

2. Secure sector-based research collaborations to contribute to the growth of contract research, and new research users.
3. Increase bid applications, and income generation.
4. Ensure our research and impact plans address relevant international research priorities.
5. Increase doctoral capacity and the number of postdoctoral research associates, through external funding.
6. Ensure we consider equality and diversity in all aspects of our research activities.
7. Develop our open research environment, including open data to increase transparency, dissemination and impact.
8. Specifically support the next generation of researchers.

We will achieve this by further engaging with national and international collaborators to maximise our potential to secure external funding for interdisciplinary work. We will focus on collaborations with health and biomedical sciences partners, working with public health bodies as well as commercial partners. We will continue to provide incentives to grow our doctoral provision and provide strategic support to the next generation of researchers (through research career planning; and allocation of research mentors; and sabbaticals). We have been embedding impact in all major research projects and will monitor those closely. We will also continue to foster existing impact partnerships, engage with new users of our research, and pursue commercialisation opportunities where relevant. We have identified the Royal College of Veterinary Surgeons Knowledge as a potential research user for impact related to a One Health approach to infection prevention. We will also extend our impact to health and social care providers to reduce dehydration and prevent urinary tract infections in the elderly.

1.4 Support for standards and ethics

Academic research infrastructure to support standards

The University Research, Scholarship and Enterprise Committee (URSEC) chaired by the Deputy Vice-Chancellor, receives reports on matters of University-wide interest, including regular updates and annual reports from schools on research, scholarship, and knowledge transfer activities. URSEC also advises on research governance within the individual Schools. It oversees key performance indicators and their fitness for purpose in the context of the University's Strategic Plan. A University Research Degrees Sub-Committee scrutinises PGR progression to registration to MPhil status, and onward to doctoral (PhD) completion.

Ethics

The University Research Ethics Committee (UREC) – a subcommittee of The University Research, Scholarship and Enterprise Committee (URSEC) - has overall responsibility for ethics approval, and scrutinises all staff and students' applications for approval. This UoA's research is overseen by the 4 respective School/College Research Ethics Panels (SCREPs). SCREPs review and approve student and staff ethics applications; and ensure that external approvals are obtained, and governance requirements met, prior to the commencement of the research e.g. Health Research Authority and NHS Research Ethics Committee. A subgroup of UREC oversees NHS-contracted research and IRAS applications. UREC subgroups are convened where 'high risk' applications are identified by any School/College SCREP. Any equipment used for research purposes is regularly inspected and tested to ensure it meets technical and safety requirements.

1.5 Open Research

This UoA fully observes the principles of open research. We value integrity and accessibility of the research process, and share all aspects of our research which we make accessible to all, where possible. Our research outputs and methodologies are accessible via the UWL Repository. Using open access has enabled us to engage with a wide range of readers, and many other research-

active communities. Our open research practice has enabled us to attract a wide range of interest in our activities and to secure the trust and confidence of organisations, professional bodies communities (regional, national, and international) with which we have developed partnerships.

The UWL Repository is widely used by this UoA, with 661 publications associated, of which 85% have full text associated with the record. All members of the UoA have an ORCID ID and have received training on research data management. We plan to take advantage of the Gold route in the future, where relevant.

1.6 Interdisciplinary Research

Our research is translational in nature and requires multi-disciplinary teams. Healthcare, health psychology and biomedical sciences have interdisciplinary links with Hospitality, Arts, Social Sciences, Economics, and Computer Science. Biomedical Sciences' interdisciplinary links have been developed to address the gap between the vast amount of data generated on human diseases and our ability to interpret / exploit it. Examples of this include genomic sequencing and transcriptomics and proteomics data. We are combining expertise in bioinformatics (Brew), microbial genetics (Mkrtchyan), and molecular and cell biology (Morgan), to help us understand and interpret these very large datasets. We also incorporate art (Tischler and colleagues) into dementia care (Rafnsson, O'Malley) to develop new therapies.

2. People

2.1 Staffing strategy

In 2015, the University introduced a new employment framework for the management, development and support of all staff, the Academic Employment Framework (AEF). In this framework all academic staff can focus (in addition to teaching) on research, scholarship and/ or knowledge exchange activities (see institutional statement, section 3.1). The AEF has enabled this UoA to achieve its strategic aim to build a strong research contingent towards REF21, and beyond. The project was initially led by existing staff, and led to the appointment of an additional seven staff members added over the period 18-19/19-20. The first biomedical sciences student cohort joined in September 2020.

The UoA comprises seven existing UWL staff members who were promoted to Associate Professors and Professors during the period (**Brew, Fox, Lafarge, Manyande, Mafuba, Tsiami, and Wilson**); one professor appointed in 2013 (**Gates**); one professor promotion in 2011 (**Loveday**); and one existing SL (**Goerzig**). Recent appointments joined UWL with an outstanding track record of having secured external funding as PI and Co-PI in their previous institutions (including from NHR, the British Lung Foundation, Cancer Research UK, and Breast Cancer Now). These include eight professors/associate professors (**Hughes, Loughlin, Luo, Mkrtchyan, Morgan, Rafnsson, Tischler, Barley**) and one lecturer (**O'Malley**). As part of our succession planning, we have also identified junior staff and provided opportunities (described in section 2.2) with plans to develop their research potential through career planning, mentoring, and protected research time. Fourteen members of staff have been identified as 'next generation' researchers for this UoA.

2.2 Staff development

Staff development opportunities are available across the University, and at School level. The AEF provides access to conferences, sabbaticals, other staff development programmes (e.g.: equality and diversity, managing stress, appraisals, preparing for promotion, and working with external collaborators, leaderships skills). Three staff benefited from sabbaticals that have fed into this REF submission, and this has helped build capacity towards the next one. The University has supported this UoA with REF guidance, discussions on the Code of Practice and mandatory training on unconscious bias for UoA leads and reviewers. The unit has also engaged with the university-

wide programme of public and stakeholder activities run by the Communications department, including public lectures attended by local businesses, organisations, local government representatives, health sector representatives, and members of the public. The Communications department offers advice on media; public engagement; engaging with diverse audiences; social media; and lobbying strategies. Its Research Communications group meets monthly to strategize media exposure for its research; this UoA is represented on this group (Wilson). UoA members have also been supported by Research and Enterprise Operations (REOps) (see institutional statement, section 3.2) in all their bid applications. The Graduate School (see institutional statement, section 3.2) provides training for supervisors, and for all PGRs (described in 2.3).

SBMS works closely with CNMH on doctoral research training, shared supervisions, and research ethics approvals; integration activities have been gradually incorporated, with further plans for applications to holistic health bids. The UoA also shares events with the School of Human and Social Sciences – in particular, the Twilight Tuesday Seminars (chaired by Lafarge) open to all staff, which has met fortnightly since 2016 to share research with colleagues, and external speakers. Dementia research have run conferences and interdisciplinary events (e.g.: the Imagination Café) to inform and generate research and collaborative groups, e.g. ‘sandpit’ events to trigger new research projects among new researchers and providing seed funding (funded by the University). The West London Centre for Evidence-based Healthcare provides evidence synthesis training for internal and external academic staff, doctoral students and NHS staff. This centre also provides support for staff working on research funding proposals. We run a mentoring scheme in which senior staff (e.g., Loveday, Wilson, Lafarge, Morgan, Rafnsson, Tischler) mentor junior researchers through drawing up research and impact plans, advising on publication outlets, and acting as reviewers for papers and bids. A number of junior colleagues have also submitted joint research bids with their mentors in all areas of the UoA.

UoA members engage with the annual University Research Conference led by the PVC (Academic) - one of three annual research events which provide opportunities to disseminate research findings, and network across the University. These events are attended by senior and junior researchers and PGRs, and have included discussions on research impact, public engagement, interdisciplinarity and other research matters. This UoA has contributed with regular attendance and presentations on subject research, e.g.: decision making in prenatal diagnosis (Lafarge), mental health (Goerzig), and psychosocial interventions in health settings (Barley), infection control (Loveday and Wilson), dementia care (Tischler).

2.3 Research students and supervision

Community

All doctoral students are supported by a principal supervisor (subject specialist), and a second supervisor. In cases of multidisciplinary research projects, a third supervisor may also be assigned if relevant. Our doctoral students are an integral part of our UoA research community and we engage them with many opportunities to present their research with members of staff and other PGRs. We run specific PGR workshops to support students with presentations they have to make as part of the ‘doctoral student journey’ (see institutional statement, section 3.2), or externally. The annual UWL doctoral conference, organized by the Graduate School, provides a forum for all doctoral students to share their research, supported by their supervisors. It is always well attended by members of this UoA who support the event, and the students presenting their work. The doctoral competition from across all PGRs, has seen six of our students win best presentation/best poster prizes. We also have a fund to enable research students to attend conferences at very low or no cost. Drawing on this support, students have presented at 13 such conferences over the past 3 years. As full members of our community, PhD students have been mentored to publish as single authors or with their supervisor; most supervisors have published with their students.

Ensuring the next generation of researchers are confident in disseminating their knowledge, we provide full-time students with teaching opportunities within a limit of 6 hrs/week (including preparation). PGRs engage with groups according to their evolving degree of expertise. Supervisors acts as mentors to support them in delivering those teaching duties.

Training

In addition to the UoA-based training - which includes technical training, statistics surgeries, methodology seminars - our students attend a formal central research training programme run by the Graduate School (with contributions from senior staff across the institution), based on the *VITAE Framework* which covers all aspects of the research process, methodology and integrity, regulations, progression and support matters (see institutional statement section 3.2). It comprises a complete series of Research Development Units (RDU) - with embedded Epigeum interactive online activities - running throughout the formal period of registration. The Graduate School also provides academic advice, where relevant. Our students have standard access to student services for pastoral advice. Under COVID-19, the Graduate School coordinated a risk register with specific actions to support students needing additional advice, time or resources.

Supervisors attend annual mandatory training also run by the Graduate School covering all stages of supervision, highlighting good practice, and UWL specific guidance, including discussions about supervisors' roles are defined in the University's *Code of Practice for Research Students and Supervisors* (see institutional statement, section 3.2) which outlines an approach of scholarship, integrity and collegiality, with more formal requirements being stipulated in the University's Research Degree regulations.

Progression

One of the University's priorities (see institutional statement, section 3.2) has been to support students to complete in time. We aim for completion within 3 to 3.5 years of enrolment, and this is supported through mechanisms that enable student progression - monthly supervision meetings, regular and annual reports, milestone presentations, and opportunities to speak directly to the Graduate School for extra support. Progression is monitored by the Graduate School through the university-wide 'doctoral journey'. We subscribe to Postgraduate Research Experience Survey (PRES) and results show a very high level of satisfaction of our graduate students with the support and opportunities they receive. In the 2020 survey, UWL was ranked 4th (out of 103) on the Research Skills measure, 5th on Responsibilities and 7th on Progression.

In the Schools/Colleges underpinning our UoA, students attend monthly meetings where they can discuss their research projects; specific issues related to their training or progress; and other practical issues. Student representatives also contribute actively to the University Research Scholarship and Enterprise Committee (URSEC, described in section 1.4)).

The intention of this UoA, is to continue to increase the quality of our support, including to ensure students complete on time, and towards employment, after graduation.

Equality and Diversity

All research academic appointments and promotions in the UoA were made on the basis of outstanding research track-records and future potential. We have arrangements to support flexible and/or remote working and we can ensure that the duties of female or male colleagues taking parental or adoption leave are fully covered. HR deliver a mandatory programme of training (mentioned in 2.2) on equality and diversity which has been attended by all members of the UoA. Doctoral supervisors are also trained on EDI by the Graduate School.

Research development opportunities

Internal development opportunities are open to all staff and discussed at the annual appraisal where development needs are identified. There is an open and transparent process for applications for internal research seed funding, sabbaticals and external conference attendance.

Recruitment and progression of research students

The recruitment of doctoral students is based on regulations that specify entry requirements, with applications supported by a written statement, and interviews by a panel including School/ College potential supervisors and a Graduate School representative to ensure fairness and consistency across the institution. Progression to PhD transfer is overseen by the University Research Degrees Sub-Committee.

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As a UoA we have received training on equality and diversity; and the UOA lead and reviewers have received specific training on unconscious bias to support them in their role.

3. Income, infrastructure and facilities**3.1 Income**

Our income approach is to bid for both external income and internal investments; the latter providing a platform for larger external bids. Internal funding is also used to support active researchers with travel and equipment, and to provide funding for PhD Scholarships (see section 1.2). The four Schools/Colleges that underpin this UoA apply very similar approaches, and rely equally on central support from REOps that is tailored to specific calls, supporting researchers in all aspects of the application process.

Staff are supported more specifically through, for example, alerts from Research Professional; support to attend specific funding events; and sabbaticals and study leave as described in section 2. This support structure has been extended and strengthened during the assessment period. This has enabled us to extend our activities and to develop new initiatives, often working as leading contributors to national collaborative projects. More recent members of the UoA have come from institutions and positions where they had collaborative links with eminent national and international partners, and have brought those links with them to UWL. We have attracted funding from public-sector health research funding bodies, research councils, charitable foundations, and industry. Total income recorded over this REF period was £1.974m.

The ten-year NIHR-funded Healthcare Associated Infection Research Network project and associated Service User Research Forum were completed in 2014/15 (PI: Loveday; £1.72m; 2005-2014). These programmes supported the **development and implementation of the epic national guidelines** and policy research projects focused on the prevention of healthcare-associated infection control.

New research on **hand hygiene** in infection control was supported by GAMA Healthcare Ltd through the “PatHH Study – Improving patient experience of hand hygiene” (PI: Loveday; £37k) and by DebMed Europe (now part of the SC Johnson group) to establish the denominator for electronic monitoring of hand hygiene opportunities (PI: Loveday, £104k; 2018-2019).

Richard Wells Research Centre received funding from the Hospital Infection Society for the project “**Preventing non-ventilator hospital-acquired pneumonia: the PRHAPs Study**” (PI: Loveday; £65k; 2019-2021 extended to 2022) and from the General Nursing Council Trust for “U-DECIDE - Preventing short-term urethral catheters becoming long-term: a mixed methods study of community nursing practice and decision-making” (£19k; January 2018 – December 2018).

Richard Wells’ research programme on **hydration for older residents in care homes** was supported from several sources. Initial funding was won from NIHR Collaboration for Leadership in Applied Health Research and Care Northwest London (CLAHRC) (£84k) and UWL match funding of £84k (project total £168k; 2015-2017). Research on delivering **nutrition and hydration care** to residents with dysphagia was funded by the NIHR Research for Patient Benefit Programme (NIHR RfPB) (PI: Wilson; £137k; 2019-2021, NIHR200091).

The Abbeyfield Research Foundation funded a project to test a **multi-modal intervention** to enhance hydration of care home residents with dementia (PI: Wilson; £19k; Jan 2018 – April 2019). Abbeyfield subsequently funded research to explore the opinions of older people about their preferred characteristics of drinking vessels and how these can be incorporated into optimum drinking vessel design (PI: Wilson; £19k; Jan to June 2020); completion of this project was delayed by the impact of COVID-19 on care homes.

Scottish Infection Research Network - Enhanced surveillance project to identify **norovirus index cases** (CI Loveday; £48k [UWL £5k] 2015-2016)

Barley led the NIHR-funded project “Addressing a Critical Need: **Feasibility of Acceptance and Commitment Therapy for Bariatric Surgery Patients at 15-18 months post-surgery**” in conjunction with West London Mental Health NHS Trust (£225k; May 2018-May 2021; PB-PG-0816-20012), which was submitted and approved whilst she was at UWL. Barley was also a CI on the NIHR “**Enhancing de-escalation techniques** in adult acute and forensic units: development and evaluation of an evidence-based training intervention (EDITION)” project led by the University of Manchester (project budget total £533k; 2018-2020; 16/101/02).

NHS Improvement and the Department of Health funded a series of five projects led by Gates and Mafuba which culminated in the development of an audit tool to **support guidance on staff staffing levels in Learning Disability services** (project budget totals, £55k, 2013-2018). A **randomised controlled feasibility trial** of the ‘Books Beyond Words’ intervention to improve the management of epilepsy in people with learning disabilities was funded by NIHR (RfPB) (PI: Gates; total budget £210k; UWL allocation £27k; July 2014 – April 2016). Hertfordshire County Council and RESPOND engaged Gates and Mafuba in an evaluation of training senior learning disability practitioners in understanding and working with trauma from a psychodynamic perspective (£8,000, 2014-2015). Gates was CI on the SPLASH Project, a mixed methods longitudinal research and formative evaluation of an arts-based project in the East Midlands, in collaboration with the University of Derby and The Arts Council for England (Project budget £24k; UWL allocation £3k; 2018)

The Royal College of Nursing Foundation funded a “Scoping review on understanding the contribution of nurses to improve the **health and well-being of children, adults and older people with intellectual disabilities**, now and for the future” (PI Mafuba; project budget total £30k; UWL total £20k; April – December 2020. Completion delayed until March 2021 by COVID-19)

Research on approaches to **dementia** has been supported from multiple sources. AHRC funding was approved in June 2020 for **Using multisensory culture boxes** to promote public health guidance and to support the wellbeing of people with dementia in care homes (PI: Tischler; £337k; 2020-2021; AHRC AH/V006991/1)

Previously funded projects included The Imagination Café, which aimed to **create awareness of dementia** and showcase creative activities (PI: Tischler; £80k; 2018-2019; AHRC AH/R004900/1), along with grants for projects from several charitable foundations including The Alzheimer’s Society, Montessori St Nicholas, the Ben Uri Gallery and the Pauline and Harold Berman Charitable Trust.

3.2 Infrastructure and Facilities

3.2.1 Investment

The University’s Estates and Facilities investment programme (see institutional statement, section 2.1.2) during this REF assessment period, has seen the creation of social and open learning spaces, a library without boundaries, a large flexible performance auditorium, and advanced simulation spaces for research. The University has also built a Sports Centre, a postgraduate

building for doctoral students (the Rami Ranger House), and several laboratories and specialist facilities, including the Biomedical Science Research Laboratory (£2.5m) and the West London Food Innovation Centre (£2.8m,) part-funded through an ERDF grant (ERDF 23R16P00904) mentioned earlier.

3.2.2 Biomedical Sciences

The Biomedical Science Research Laboratory operates with labs that have been built and equipped to support research primarily in molecular and cell biology, and formally opened in February 2021. These category II labs include facilities for mammalian cell culture, microscopy, real time PCR, and microbial culture. We are in the process of purchasing state-of-the-art nanopore technologies for our research on genomics sequencing. The current projects making use of the labs include targeting transcriptional regulation in cancer, combating antibiotic resistance, microbial genomics in public health, and the molecular biology of muscular skeletal disorders.

3.2.3 Healthcare

Eye tracking room

Eye tracking is used for non-invasive experimental measures in numerous fields in psychology (cognitive, social, neuroscience, visual perception, substance use and misuse). We currently have 2 eye tracker units: the Tobii TX300 screen-based tracking unit for in lab experiments and a Tobii Pro Fusion 250Hz unit for more flexible deployment, which allows for example the study of how patients and relatives navigate hospital environments.

Shimmer Galvanic Skin Response

The shimmer GSR kit allows us to non-invasively measure levels of emotional arousal in responses to stimulus or environmental changes. This is measured through changes in sweat gland activity, providing an indication of the intensity of participant's emotional state. This information can be gathered in conjunction with the other measures in the department (e.g., EEG, Eye tracking measures). We aim to use this in future studies including bio-feedback.

Electroencephalogram Laboratory

Electroencephalogram enables high temporal acuity allowing us to make inferences about cognition in cortical regions and networks in response to tasks or stimulus. This will be used – as above – for studies needing to get insight into neuronal activity.

Virtual Reality Research Lab

This is used to provide precise control of experimental conditions, recording of user experiences and interactions between biophysical and psychometric batteries in response to several stimulus. It has been used to explore cognition across social, developmental and atypical psychological fields, in research on allied health professionals' responses to situations of conflict, violence and aggression.

Simulated Wards

We have five wards (equipment investment representing c£1m) with hospital beds wall mounted ophthalmoscopes and auroscopes; and including manikins used for simulated clinical scenarios for allied health and educational research.

3.2.4 Nutrition

WLFIC (see section 1.2.1) has supported start-ups and SMEs to turn concepts and ideas into commercially viable products. It also supports research experimentations on the modification of existing food and drink products, and production processes to adapt to issues related to nutrition, health, and product shelf-life and packaging. Primarily designed for commercial research, the Centre is also used for knowledge generation with research focusing on plant-based proteins and product development, nutrition of vulnerable groups and food waste management. Doctoral research linked to the laboratory includes research on the physicochemical characterisation of

seaweed proteins to create a fish analogue; the effect of plant-based diets on child health; strategies to improve the provision of nutrition and on hydration of older adults in healthcare settings.

4. Collaboration and contribution to the research base, economy and society

4.1 Collaborations

Collaborations are normally channelled through the relevant research centres; they are strategically managed with the aim of generating publications, impact and/or income. The **Patient Safety and Infection Research group** in the Richard Wells Research Centre has national research collaborations with academic institutions - the University of Southampton (research on urinary tract infections), the University of Sheffield and Sheffield Hallam University (videogrammetry of drinking vessels for older people), City University London (hydration and dysphagia in older people) – and clinical industry partners; e.g. GAMA Healthcare (patient hand hygiene), and SC Johnson (electronic hand hygiene monitoring). This work has led to the development of tools for use in clinical practice and implementation pathways for the improvement of fundamental elements of patient care. Our work with industry informs product changes (patient hand hygiene) and the accuracy of systems that inform clinical audits for hand hygiene. The College of Nursing Midwifery and Healthcare is an academic partner in the NIHR Collaborations for Leadership in Applied Health Research and Care North West London (now NWL Applied Research Collaboration) through a joint MSc course and PhDs in improvement science (2014 – present).

The **Biomedical Science Research Laboratory** has long-established collaborations both nationally and internationally, most generating funding. Morgan has been working for several years - on projects started before, and continuing with, his appointment at UWL – with the University of Los Angeles, California (UCLA), University of Sheffield since 2009, Institute of Cancer Research London since 2011, University of Nottingham since 2010. These collaborations ongoing to date, have helped drive research on the inhibition of HOX/PBX dimers as possible targets in cancer, resulting in four cancer publications. Collaborations with University of Surrey and Royal Surrey County Hospital since 2004 involved Morgan in the development of Engrailed-2 (EN2) as a biomarker for prostate, ovarian and bladder cancer, and its possible role in tumour-stroma interaction, leading to a publication in Nature Sci (2019) and one in BMC Cancer (2018). Hughes (2019- to date) is working with the World Health Organisation (as a member of the WHO traditional medicine reference group, and Head of the Royal London Hospital for Integrated Medicine WHO Collaborating Centre). Rafnsson has links with the University of Edinburgh (2014 to date); University of Manchester (2019 to date); University College London (2014 to date); the German Centre for Neurodegenerative Disease (2019 to date). Mkrtychyan is working on imminent publications in collaboration with King Faisal University (Saudi Arabia) funded through the KSA Ministry of Education (2019-) to decipher the population structure and genetic diversity of methicillin resistant staphylococci from livestock, environment and humans. Brew works as PI for Rare and Common gene variants for Pregnancy Induced Hypertension with the Genomics England Clinical Interpretation Partnership (GeCIP), UK (2018-) and Foetal Medicine at Imperial College, Queen Charlotte's and Chelsea Hospital (2018-); and run a project on skills for Variant Call analysis with the West African Sustainable Leadership and Innovation Training in Bioinformatics Research (WASLITBRe) in 2018-19.

Learning disability researchers (Gates and Mafuba) have collaborations with Public Health England (2017-18), NHS Improvement (2015-18), NHS England/Improvement (2019 - present), Health Education England (2014-present), RCN Foundation (2020-present).

During the period 2014-to date, they have worked with the following partners: RESPOND, Self-Advocacy Groups, Public Health Agency (Northern Ireland), The Royal College of Nursing, UK, Berkshire Healthcare NHS Foundation Trust, Hertfordshire Partnership University NHS Foundation Trust, Central North West London NHS Foundation Trust, and the Universities of Hertfordshire, Derby, Northumbria, Leeds, Trinity College Dublin, Chester, Edge Hill. This has resulted in a programme of work informing learning disability nursing roles; national policy on safe and sustainable staffing; safety for people with learning disabilities; development of a tested context of care tool for safe staffing; testing the acceptability and feasibility of research method/s; intervention effects on people with epilepsy and learning disabilities; and a published oral history research monograph.

For **dementia care**, Tischler's AHRC project AH/R004900/1 (2018- 2019) showcased the artwork made by research participants (people living with dementia), trained other artists and care staff, and raised awareness of dementia with a wide and varied audience. The project toured a specially commissioned art installation (The Imagination Café) to 3 locations, Llandudno, Edinburgh and London. The immersive, experiential space featured artwork made by people living with dementia during her previous project Dementia and Imagination AH/K00333X/1, funded by AHRC (2013-2017) which investigated how participation in community arts interventions can increase well-being and connectedness between the dementia community and wider society.

The **Health Psychology research group** collaborates on funded research with King's College; Goldsmiths University (Goerzig); and on a multi-countries projects (EU Kids Online) which produced many publications and policy reports (Goerzig). Manyande's work with the University of Adelaide, Luxembourg and Huazhong University of Science and Technology has led to international publications. Lafarge's work with Cermes3 and Ecole des Hautes Etudes en Sciences Sociales included a project on prenatal diagnosis practices, and the way risks of anomalies are communicated (with researchers from Brazil, Netherlands, UK, and France, in an interdisciplinary perspective including health specialists, historians, philosophers, sociologists, psychologists, and ethicists). Another project, also based in France, focused on women's experiences of prenatal diagnosis. Both projects have led to multiple publications and disseminations events (including an international colloquium June 2017).

4.2 Networks

The UoA has significant involvement with national and international networks. Both Loveday and Wilson work closely with the Infection Prevention Society and policy working groups (Public Health England, Infection Prevention and Control Steering Group 2015-17; Joint Society MRSA Guideline Working Group 2014-present; CNO COVID-19 Nursing Research Response Group 2020). Loveday is a member of the Oxford AHSN Research Oversight Group and the Patient Safety Collaborative Steering Group. Specific areas of research engagement include the focus on improving hydration in the elderly and working with the Royal Berkshire NHS Trust infection prevention team to improve patient hand hygiene. A collaboration with Elaros, a private digital health company incubated by NHS organisations, has created an IHydrate app as a digital solution to support the use of the evidence-based tools. The West London Centre for Evidence-based Healthcare (see section 1.2.1) is affiliated to the University of Adelaide and forms part of a national (UK) and international collaboration of allied health professionals focused on evidence synthesis and implementation. It is one of six in the UK and 70 collaborating entities across 34 countries that undertake evidence synthesis, training and evidence implementation.

Gates and Mafuba contribute to the national Consultant Nurse Network (2013-present) which influences both HEE and NHS E/I. They have worked with interdisciplinary national networks on safe and sustainable staffing and safety for people with learning disabilities, learning disability nursing roles, as well as networks to improve the wellbeing of people with learning disabilities. For

example, Gates was academic member of the national steering group and network for Sustainable and Safe Staffing (2013-18) for all professional disciplines in specialist learning disability services. Morgan is working with Lionex Diagnostics and Therapeutics GmbH (joint publications 2014 to date), HOX Therapeutics Ltd (Scientific advisor 2013 to date) on the development of the EN2 marker for prostate cancer. The Geller Institute Ageing and Memory has networks in industry, the third and cultural sectors, including a collaboration with Boots (2017-2020) through which it oversees their archive collection. It has established international collaborations with the Ben Uri Gallery and Museum and Montessori St Nicholas to explore the use of art in child development and older people's wellbeing; Hughes is part of a group (2020- to date) for the global charity 'Debra for Epidermolysis Bullosa', helping developing guidelines for complementary and integrated medicine. Brew has health networks with Action on Pre-eclampsia (APEC), UK (2018-to date) to investigate prevalence of histamine intolerance in human pregnancy; with Ghana Health Promotion Directorate, Ghana Health Service (2019 to date) to design and evaluate Wellness service to reduce impact of non-communicable diseases; and the WHO Africa Directorate to investigate genome variations and responses to Covid-19 infection in Africans.

4.3 Wider activities and contributions to the research base, economy and society

Editorships/ Associate Editorships

Gates (1997-) Editorial Board Member *Journal of Intellectual Disabilities*

Gates (2014 – 2020) Editor *The British Journal of Learning Disabilities*

Gates (2014-) Editorial Board Member *Learning Disabilities: A Contemporary Journal*

Gates (2014-) Editorial Board Member *Journal of Research in Special Educational Needs*

Gates (2014-) Member of Editorial Board *The Journal of Intellectual Disability*

Gates (2014-) Member of International Board of *Working Papers in the Health Sciences*, University of Southampton

Gates (2014-) Member of the Editorial Board *Intellectual Disability Research*

Gates (2015-) Editorial Board Member *Social Work and Social Sciences Review: An International Journal of Applied Research*

Gates (2017-) Editorial Board Member *Nursing Times*

Hughes (2020) Editor Special Edition *The European Journal of Integrative Medicine*

Loughlin (2010-) Founder and Editor *JECP Annual Thematic Edition in 'Philosophy of Medicine and Health Care'*

Loughlin (2013-) Associate Editor *Journal of Evaluation in Clinical Practice*

Loughlin (2018-) Associate Editor *European Journal for Person-Centered Healthcare*

Loughlin (2019-) Editorial board member *Philosophies*

Loughlin (2020-) Editorial board member for *Education Research International*

Loveday (2012-) Associate Editor *International Journal of Nursing Practice*

Loveday (2018-) Editor *Journal of Infection Prevention*

Morgan (2017-) Editorial Board member *Cancers*

Morgan (January 2020 to 2024) Editorial Board Member *BMC Cancer*

Wilson (2014-2018) Editor *Journal Infection Prevention*

Governance roles

Gates (2013-) Patron of 'Razed Roof'; an inclusive performing arts group in Harlow, UK.

Gates (2018-) Patron of Stanley Grange - a small intentional community for adults with learning disabilities and complex needs in Lancashire, UK.

Lafarge (2020-) Secretary of the Society for Reproductive and Infant Psychology

Loveday (2014-2016) President of the Infection Prevention Society

Wilson (2018-2020) Vice-President of the Infection Prevention Society

Convenors of conferences; Programme Chairs

Gates (2015) Growing older with a learning disability. *British Institute of Learning Disabilities International Conference*. Birmingham. UK.

Gates (2016) *Transforming Care Provision for Those with Learning Disabilities National Conference*, London UK.

Loughlin (2019) Co-organiser *Shared Decision Making, Person-Centred Care and the Values Agenda Conference*, University of West London

Loughlin (2018-) Director of the *Literature Database Programme*, St Catherine's College, University of Oxford

Loughlin (2019 and 2020) Co-organiser The Fifth and Sixth Annual Conference of *The European Society For Person-Centred Healthcare*, University of West London

Leadership of advisory boards, industry, commerce, research councils, learned societies or professional bodies

Brew (2020-2025) Technical Advisor to *Ghana Health Service* in The Technical Working Group for the establishment of a National Wellness Programme

Hughes (2018-) is Co-Chair of the Research Council for Complementary Medicine

Hughes (2019-) Head of the Royal London Hospital for Integrated Medicine World Health Organization Collaborating Centre; Head the World Health Organizing Traditional Medicine Reference Group.

Lafarge (2014-2016 - now both defunct) Member of NHS England Clinical Reference Group for Foetal Medicine and then Complex Obstetrics

Loughlin Project Reviewer for *Velux Stiftung*, a science funding foundation based in Switzerland (2019-2020); Invited member of the *Stephen Tyreman Legacy Group*, University College of Osteopathy, London (2019); Distinguished Fellow & Chair (2014-) of the *Special Interest Group in Health Philosophy, European Society for Person-Centred Healthcare*.

Loveday (2018-) Member of the Editorial Advisory Board of the *Journal Infection Prevention*

Loveday (2018-) Chair of the Mixed Methods Research Synthesis Methodology Group – JBI University of Adelaide

Mafuba (2015-) Member of the International Advisory Board for the *Journal of Intellectual Disabilities*

Mkrtchyan (2019-). Scientific Advisor to *Safe Air Quality*

Morgan (June 2014-) Scientific Advisor to HOX Therapeutics Ltd

Tischler (2011-) Co-founder of the International Health Humanities network

Recent invited keynotes

Gates (2019) "Better Health Improving Lives: Addressing Health inequalities with and for people with learning disabilities and their families". Royal College of Nursing Congress, Liverpool

Loughlin (2020) "Triage, rationing and Covid-19" 4th International Symposium on the Philosophy of Medicine and Health, "Unisias University, São Leopoldo, Brazil (online)

Loughlin (2020) “Ethics, rationing and the Covid-19 pandemic: First, do no harm”. Conference “Filosofia em tempos de pandemia: o pensar crítico de nosso presente” University of Vale do Rio dos Sinos, São Leopoldo, Rio Grande do Sul, Brazil (online)

Loughlin (2020) “Science and humanity: The philosophy of person-centred care”, 7th Annual Royal College of Chiropractors AGM & Winter Conference, London (President address)

Loughlin (2019) “Medicine and science – what went wrong?” Portuguese Medical Association on “Person Centered Healthcare”, Porto, Portugal

Loughlin (2018) “The Philosophy of Person-Centred Healthcare”, Brazil Roundtable in Philosophy of Medicine, Third Symposium in Philosophy of Medicine and Health Care Practices, University of Vale do Rio dos Sinos, São Leopoldo, Rio Grande do Sul, Brazil

Loveday (2017) “10 years of Evidence – from Information to Implementation Infection” Prevention, Manchester, England.

Loveday (2018) “Health Literacy and Infection – Educating the Public”, Federation of Infection Societies, Liverpool, England.

Loveday (2018) “Evidence for Infection Prevention and Control – Problems of Design and Implementation”, JBI European Evidence Synthesis Symposium, Brno, Czechia.

Loveday (2019) “Making Sense of Behavioural Science for Infection Prevention and Control”, Infection Prevention, Liverpool, England

Wilson (2019) “Driving improvement in IPS: Applying the Pareto principle”, ACIPC, Perth, Western Australia

Review activities

Brew (2016-2018) *FASEB*; (2018) *Scientific Reports*; (2020) *Journal of Food Biochemistry*; (2020) *Molecular Genetics and Metabolism Report*; (2020) *Molecular Medicine Reports*; (2020-) *Placenta*; (2020-) *PlosOne*

Hughes (2012-) *BMC CAM*; (2012-) *Complementary Therapies in Clinical Practice*; (2012-) *Complementary Therapies in Medicine*

Lafarge (2014) *Journal of Reproductive and Infant Psychology*; (2014-) *The British Journal of Health Psychology*; (2015-) *The Journal of Genetic Counselling*; (2015-) *The Qualitative Health Research*; (2015) *Human Fertility*; (2014-2016) *Reproductive Health Matters*; (2017) *Women's Reproductive Health*; also (2019) Grant applications for The Wellbeing of Women

Luo (2017-) *Osteoporosis international*; (2019-) *Bone*

Loughlin (2014-) *Journal of Evaluation in Clinical Practice*, (2019-) *BioMed Research International*; (2019-) *Medical Humanities and Social Science and Medicine*; (2020-) *BMC Medical Ethics*; (2020-); *Education Research International*; (2020-) *Philosophies*

Loveday (2001-) *Journal of Hospital Infection*; (2004-) *Journal of Infection Prevention* (previously British Journal of Infection Control); (2010-) *American Journal of Infection Control*; (2015-) *BMC Infection*; (2015) *Antimicrobial Resistance and Infection Control*; (2018) *Health and Disease*; (2020) *Infection Prevention in Practice*

Mkrtchyan (2018-) *Antibiotic Resistance and Infection Control*

Rafnsson (2017-) *Age Ageing*; (2014-) *Atherosclerosis*; (2014-) *BMC Neurology*; (2015-) *Circulation*; (2016-) *Journal of Epidemiology and Community Health*; (2017-) *Journal of Gerontology*; (2018-) *Archives of Gerontology and Geriatrics*; (2019-) *Psychological Sciences*; (2020-) *Alzheimer's and Dementia*; (2020-) *Social Psychiatry and Psychiatric Epidemiology*

Wilson (2002-) *Journal of Hospital Infection*; (2002-) *Journal of Infection Prevention* (previously British Journal of Infection Control); (2004-) *American Journal of Infection Control*; (2005-) *Clinical Infectious Diseases*; (2010-) *Clinical Microbiology and Infection*

Members of learned societies or industry boards

Loveday Healthcare Infection Society (2010-); Infection Prevention Society (2001-); Society for Healthcare Epidemiology of America (2008-2016)

Mkrtchyan Society of Applied Microbiology (2009-); Chartered Biologist, CBiol, The Royal Society of Biology (2010-2020); The Healthcare Infection Society (2018-)

Tischler Invited member of the Boots UK Scientific Advisory Board (2018-2020)

Wilson Healthcare Infection Society (1998-); Infection Prevention Society (2000-)

Awards, prizes, distinctions

Gates (2018) Named one of the 100 most influential nurses in the NHS 70th Birthday Celebrations

Gates (2015) National winner of the NIHR CRN: Mental Health award for outstanding carer

Hughes (2019-) Member of the UK's All-Party Parliamentary Group for Integrated Healthcare involvement in research

Visiting Professorships /Scholarships

Gates (2016-) Visiting Professor of Learning Disabilities University of Derby

Lafarge (2018-2019) Visiting Scholar at l'Ecole des Hautes Etudes en Sciences Sociales, Paris. France

Tischler (2018-2020) Visiting Scholar at University Jaume 1 Spain