

<p><b>Institution: University of Cumbria</b></p>
<p><b>Unit of Assessment: 3 Allied Health Professions, Dentistry, Nursing &amp; Pharmacy</b></p>
<p><b>a. Overview</b></p> <p>The University of Cumbria was formed on the 1st August 2007, through the amalgamation of St Martin's College, Cumbria Institute of the Arts, and the Cumbrian campuses of the University of Central Lancashire. The Allied Health and Nursing groups were part of St Martin's College. The range of research within health, wellbeing and rehabilitation (nursing, Occupational Therapy &amp; physiotherapy, medical imaging) at the University of Cumbria is broad. This unit is split across two campuses, operating in both Lancaster and Carlisle. Staff are involved in research projects leading to: presentation of papers at national and international conferences; leading of national seminars; publication of papers for peer reviewed journals; the editing of journals; collaboration with health and social care institutions and professional bodies; reviewing of books and contribution of chapters to edited volumes.</p> <p>All research within this unit takes place within the Faculty of Health and Wellbeing, with areas of research distributed across a number of disciplinary and practitioner related groupings. The Faculty has a well-established track record in practice-based research and scholarship through its legacy colleges and institutions, focusing largely on developments in applied and advanced practitioner research. The unit works in partnership with employers, research students, honorary research fellows, other University staff, and members of the public, specialising in applied research, scholarship and knowledge transfer. Our strong professional focus ensures close alignment of research and teaching with practitioners at the forefront of their particular fields.</p> <p>Staff research and PhD students are monitored and administrated through the University Research Office and Graduate School. Within the Faculty a Research Coordinator advises, monitors, and supports research activity for both staff and PhD students, creating linkages in research activity across and between individuals in different disciplines. This cross professional and interdisciplinary working is further fostered by the presence of research groups, as outlined in section b. In addition to the university research conference run each year in July, a Faculty research conference is run once a year in November or February to act as a vehicle for dissemination of these groups' research activity.</p>
<p><b>b. Research strategy</b></p> <p>During the period, the strategy of the unit has been affected by the evolution of research and practice within the new University context. Capacity building and research development have been important factors within these changes, and have underpinned and driven the research strategy.</p> <p>The Faculty recognises research and scholarship as fundamental parts of the academic life and fosters a culture of success in developing new knowledge and applying this knowledge to all the University's internal and external activities. The Faculty strategy sets the framework for development of research and scholarship within the unit and is designed to:</p> <ol style="list-style-type: none"> <li>1. Enable and promote the development of a research culture which is driven by the need to inform, enhance and advance evidence-based practice and content across and outside of the institution.</li> <li>2. Give a framework to nurture talent, develop and build research capacity and capability for the advancement of research areas within the University.</li> <li>3. Promote and enhance the role of the University as a source of knowledge and expertise through collaboration and partnerships with employers, organisations, and individuals.</li> <li>4. Provide a forum for knowledge exchange between academic, professional and social communities to add value to service delivery.</li> </ol> <p>In 2008, the key research groups were medical imaging and mental health and health promotion. The main research strategies were to capitalise on the potential for new collaborations due to the formation of the University, particularly with the Centre for Regional Economic Development (CRED), with social environmental sciences (such as work on the effects of the Cumbria floods) and arts and mental health work. Such internal interdisciplinary interactions were coordinated and facilitated by the unit's Centre for Health Research and Practice Development (CHRPD). Whilst some of this work is on-going (for example, through an interdisciplinary PhD on the use of photographs for facilitating the discussion of chronic pain within families), a large proportion has</p>

been affected by further structural reorganisation. Although this work was productive within the assessment period, e.g. flood publications such as the CHRPD article Carroll, Morbey, Balogh, and Araoz (2009), published in *Health and Place*, it cannot be submitted to the current REF due to the changes which have taken place within the research portfolio of this unit. One particular significant shift is the change in focus away from mental and public health research, which has been driven by the departure from the University of a number of key researchers.

Current research is grouped into the following main areas:

- The *Medical Imaging Perception* group investigates the development of expertise in medical image interpretation by recording the visual search and decision strategies of observers who have a spectrum of radiological experience from novice to expert, principally using eye-tracking technology. The focus of this research is to understand human expertise and in particular visual expertise in radiology. The research explores the use of eye movement paradigms as a means of determining the various aspects of visual expertise and how they can affect performance. An example of this is the work of DONOVAN & PHILLIPS who have explored how experts quickly obtain a global impression of an image and identify abnormalities before the image is searched. This phenomenon is also found in other domains of visual expertise such as pathology and dermatology. This work has been supported through National Institute for Health Research (NIHR) and Phillips Medical grants.
- The *Rehabilitation* group is focused on investigating Occupational Therapy and physiotherapy practice and models. The occupational therapy research has a particular focus on living with and managing long term conditions and emerging new models in forensic mental health. The physiotherapy research is focused on musculo-skeletal techniques and measurement. An example of the work in Occupational Therapy is the work of COX in collaborative research to identify the most effective approaches in the management of Chronic Fatigue Syndrome, and the developing work of Morris in implementing a new approach to occupational engagement in forensic settings. The work of Stigant is an example of research exploring digital assessment of range of movement.
- The *Nursing, Health & Social Care* group is focused on current issues in health and social care, in particular working with people with learning disabilities (Mee). Additionally this group are developing an evidence base in pedagogy and transition of children, young people and adults (O'Riordan, O'Halloran), and new digital platforms for learning. The work within the group on pedagogy is being submitted in Unit of Assessment 25: Education.

A further strategic driver in RAE2008 was the development of staff research capacity through the previous CHRPD; as a large proportion of academic staff are Allied Health Professionals and do not necessarily have research experience or higher degrees. The capability funding received following RAE 2008 has been used to support staff capacity for research, particularly for completion of PhDs or to pump prime exploratory and pilot work to form the basis of larger research grant submissions. Support has been focussed on areas with potential for development and growth. This includes enhancing existing areas of research excellence (e.g. Medical Imaging; Occupational Therapy) and establishing new areas of further research and scholarly activity, such as in areas of Nursing and Midwifery. This has been achieved by establishing personal research goals to enable all academic staff to become effective scholars contributing through measurable outcomes of benefit to the academic reputation of the University. The influence and impact of any research activity now forms part of personal development discussions and planning, with a view to development towards REF 2020, acknowledging our position as a young and emerging institution.

Time has been spent in developing strategic and synergistic partnerships with key stakeholders who can help to shape the research agenda, such as the local and regional NHS trusts. This was also a key strategy from RAE2008; examples are the number of collaborative and evaluation projects commissioned by NHS North Lancashire (COX), Cumbria Partnership NHS Foundation Trust (COX), Calderstones NHS Foundation Trust, and collaborative grant funded projects (DONOVAN, PHILLIPS, COX). A further route to engagement with stakeholders, particularly communities and businesses on the Cumbrian West Coast, is through the establishment of the **Cumbrian Centre of Health Technologies (CaCHeT)** in 2012. CaCHeT focuses on the development

## Environment template (REF5)

of technologies to improve health and wellbeing, particularly through applications to rural, dispersed communities, ageing populations and problems of industrial regeneration, and is currently developing its research programmes.

The main strategic objectives over the next five year period include:

- To continue to develop the capacities and capabilities of staff, including through development activities to increase numbers of quality publications and staff attaining PhD.
- To maintain and extend linkages to stakeholders, including NHS trusts.
- To develop the research themes of CaChET, and establish it as a local and national centre for research excellence in the application of technologies for health improvement. This will involve using the centre as a focus for all related work, and build on existing research areas, such as telehealth and telecare.
- To extend the portfolio of externally funded research undertaken, including through NIHR and charitable grant funding.
- To increase the proportion of staff undertaking collaborative research, including both practitioner based research with NHS and other partners, and with academics at other Higher Education Institutions. Specifically, this will include development of joint research programmes, but also will look to develop positions for category C staff.
- To focus and develop key research themes, including medical imaging, rehabilitation, nursing, social care and technologies for healthcare. These themes will operate through research impact hubs, which will be: Occupational Therapy; medical imaging perception; e-health and e-learning; mental health and resilience; physical activity and wellbeing; healthy ageing; and voices of people with learning disabilities. The work within these areas will be focussed around key national and international research challenges, particularly around managing healthcare in dispersed and rural settings, and around managing healthcare for an increasingly ageing population.
- To increase the numbers of PhD students which the unit supports, including continuing to increase the numbers of full time students recruited.
- Further development and growth of the Occupational Therapy Research Hub.

The research focus of both Occupational Therapy and physiotherapy are linked to the national research priorities set by professional bodies (College of Occupational Therapists (COT), and Chartered Society of Physiotherapy (CSP)); where relevant staff are bidding for grants related to these priorities. For the former, this is via the UK OT Research Foundation (UKOTRF). For the latter, this is particularly focused on the musculoskeletal and mental and physical health and wellbeing themes, and links with the work of the Active Ageing Research Group within the sport unit (26). CaChET's approach to exploring technologies for effective healthcare management, predominantly through remote services, particularly addresses concerns of the North East and North Cumbria Academic Health Science Network (AHSN) on rurality in healthcare. This is an important regional issue, but also reflects issues for national and international communities.

### **c. People, including:**

#### **i. Staffing strategy and staff development**

Since the University was formed in 2007 it has gone through a number of organisational changes. Over the last 5 years a number of established and recognised researchers in Allied Health and Nursing have retired or left the University; this has had an impact on the number of staff undertaking research. It has taken time to re-establish a research staff body.

The University is committed to supporting the research development of its staff and fully endorses the Concordat to Support the Career Development of Researchers. Whilst the University does not currently have a large number of dedicated research staff (i.e. research only posts), we are committed to providing development and training opportunities to strengthen research capabilities. A high proportion of our work is in practitioner based disciplines, with many of our academic staff coming into Higher Education from professions; therefore providing opportunities for staff to gain

skills in research is fundamental to maintaining and developing our research capabilities, capacities and culture. Researcher development is particularly important, given the changes in staffing outlined above. The University is currently undertaking a benchmarking exercise against the principles of the concordat, and plans to submit an application for the HR Excellence in Research award in 2014.

The staffing strategy is largely determined centrally by Human Resources. Frequently, academic staff are appointed on the basis of their practitioner expertise rather than prior research experience, qualifications or publications. However, there is increasing direction from the Faculty to appoint a greater number of more experienced staff, particularly to posts in strategically important research areas. The unit does not use short or fixed term contracts for academic staff.

Leadership for research within the unit is provided by the Faculty Executive Dean and Associate Deans working in partnership with the Professorial level Research Coordinator (COX) and Director of CaCheT (new appointment in August 2012) linking to the Vice Chancellor, Pro Vice Chancellors and the Director of Research and Graduate Studies.

Our commitment to researcher development is fixed in our goal to achieve Research Degree Awarding Powers as stated in the strategic aims on the creation of the University. It is reflected in our engagement with the pilot for the Researcher Development Framework (RDF), which the University subsequently intends to roll-out to all academic staff. This will be an additional element to help tailor our support mechanisms to the needs of individuals. Staff also benefit from a fixed annual allocation of 25 days Scholarly and Research Activity time and access to the Epigeum research skills software package, Sabbatical Leave funding scheme and Research and Scholarly Development Fund. As part of our commitment to developing Early Career Researchers, we also provide fee waivers and additional support mechanisms (such as funding to cover fees for PhD undertaken at other institutions) for staff members developing their research capabilities by attaining higher degrees following a professional academic career.

Due to the number of health professionals who are academics within the unit, a considerable proportion of staff are Early Career Researchers. As such, much of the research development support is aimed at this grouping, with processes in place to allow all staff members to develop their capabilities. In addition to the fee waivers and access to internal funding outlined above, support for development is available through the Research and Scholarly Plan process with Line Managers, and through bespoke support via the Research Coordinator. This includes a defined process for post-doctoral research planning, and an informal mentoring process to develop skills by the co-authoring of research outputs and co-applications for external research funding with more experienced researchers, in order to gain practical experience of key research skills. These increases in research activity, including outputs and impact from growing numbers of staff with PhD and tailored post-doctoral support will be evident within the next assessment period. The increase is reflected in the number of staff with doctorates within the unit, which has risen from 3 at the beginning of the assessment period to 19 in 2013, with a further 15 currently undertaking PhD.

The University has a comprehensive Equality, Diversity and Inclusion strategy and a set of related policies and procedures that help to ensure equity of opportunity for all students and staff. This includes positive engagement with stakeholder groups external to the University, particularly with creating access for local community and under-represented groups. Specifically in relation to research activity, the procedures allow monitoring of equality, diversity and inclusion across research student recruitment, progression and completion. The policy is also applied to research staff appointment, promotion and support and where appropriate equality impact assessments are completed to evaluate the potential impact of new policy or procedures. The quality of research is maintained on a day to day basis by a Faculty Research Coordinator, who deals with bidding and quality across the unit.

Since 2008 the number of national and international conference papers and presentations, and published peer review articles within the unit has significantly increased. In addition a greater number are involved in organising external conferences and meetings, and are

active within subject or area associations, research societies and relevant professional bodies, as described in section e. There is a steady increase in the number of staff involved in developing, writing and submitting bids for external funding, e.g. NIHR grant streams, UKOTRF, CSP, and charitable organisations, such as Rosemere Cancer Foundation.

Since 2010 the unit has appointed five Visiting professors to support the research and scholarship of specific areas of research in Nursing, Mental Health, Public Health and Learning Disabilities. Specifically, these include the Head of Research at the Cumbria Partnership NHS from the NHS, and Professors from both UK and overseas Universities (Canada). Contributions include involvement in internal staff conferences, contribution to the PhD Summer School and development of collaborative research programmes and application for external funding. The unit has also retained two Emeritus Readers and two Emeritus Professors to support the supervision of PhD students and the wider research environment. The Faculty currently has 15 Honorary Research Fellows in nursing, radiation protection, social care, public policy, mental health, Occupational Therapy and rehabilitation medicine. Contributions include joint research, PhD supervision and external input to the Ethics Panel, and Fellows include UK and international academics and professionals from NHS Trusts.

There have also been research promotions within the period, with Diane Cox achieving Readership and subsequently Professorship in May 2011; Alison Marshall to Professor in May 2013; and Senior Lecturer Steve Mee to Reader in May 2013. These reflect the development of the strategically important research areas of Occupational Therapy, CaChET and nursing, health and social care respectively.

## ii. Research students

The University of Cumbria is currently working towards acquiring Research Degree Awarding Powers (RDAP) and there are strategies and policies in place to achieve this, coordinated by a cross-institutional RDAP Steering Group. Research degrees are currently validated by Lancaster University, however, the management, administration and delivery of the postgraduate research programme is entirely managed by Cumbria. The University registers post graduate research students, provides supervision and research training, and manages quality and progression through the Cumbria Research Office and Graduate School.

Of the students registered with the University, a third are studying subjects related to Allied Health Professions and Nursing. These have historically been part-time students studying whilst continuing to practice in health and social care, however, over the past 3 years the number of full time students registering has been increasing. A number of these have either taken up University studentships or are funded by other sources such as by governmental agencies. We have a steady increase in the number of applications and registrations of international students. Our postgraduate research students include a number of staff from the unit who are registered for their PhD at the University: this supports the practice of the University and Faculty to enhance the overall capacity and capability of its staff. As the Faculty is dominated by professional vocational degrees many of the staff are from similar backgrounds in health and social care; social work, Occupational Therapy, nursing (all branches), and physiotherapy, often commencing their academic careers from a practitioner and non-research active background. Within the assessment period there have been 12 PhD completions (including one PhD by publication) and one MPhil in Nursing. Of the PhD completions, 7 were in medical imaging and sonography, 2 in occupational therapy, and 3 in other health related disciplines.

The training and supervision of research students is monitored through the Graduate School and managed by the Research Coordinator. The University has a well established bi-monthly programme of support and training seminars, an annual research conference and a specific Doctoral Colloquium, as well as a two week PhD summer school. All of these training activities are cross-disciplinary and provide a rich student culture. The University uses a team approach to supervision with the research student supported by a main and one or two additional supervisors.

## d. Income, infrastructure and facilities

### *Income*

Research income for the unit is derived from a range of sources. Much of the practitioner based

**Environment template (REF5)**

research is funded through successful internal research grants and awards, contract research, commissioned evaluations and knowledge transfer partnerships (KTPs) (e.g. KTP with the Chronic Pulmonary Disease (COPD) Centre of Excellence, East Lancashire Hospitals NHS Trust).

The amount of externally funded research applied for has increased. Specifically the medical imaging research has been supported by a proportion of the multicentre collaborative £1.5 million NIHR programme grant and a specific £45,000 Phillips Medical grant (DONOVAN, PHILLIPS). The collaborative work of COX on effective interventions for people with Chronic Fatigue Syndrome was supported by a proportion of the £3.5 million multi-centre Medical Research Council (MRC) grant with additional money from the Department of Health and Scottish Executive, and a specific £20,000 grant from the Northern CFS/ME network for the Tele-rehabilitation study. A number of other successful grants, such as pump-priming for an exploratory study from Rosemere Cancer Foundation, represent on-going and developing work, with results more likely to be seen in the next assessment period.

*Infrastructure*

To support a culture of scholarship and research excellence the Faculty provides a robust infrastructure which includes the establishment of the roles of the Research Coordinator from 2010, Director of CaChET and establishment of the centre focussed on health technologies from 2012, and the use of the Research posts within the University staff structures to support key elements of research activity, such as Honorary Research Fellows, Visiting Professors, Readers and Professors.

Members of the unit were directly involved in the development of the Cumbria and Lancashire Allied Health Professions Research Network (AHPRN) regional hub with collaborators from University of Central Lancashire. Launched in 2009, AHPRN specifically supports development of practice collaborations and research (COX), through provision of opportunities for networking, and collaborative clinically-based research. Initiatives through AHPRN are still at an early stage, but outputs are likely to be available later in the next assessment period. The network strengthens the research environment by direct engagement with practitioners and with stakeholder priorities through workshops and master classes.

Within the Rehabilitation Research Group an Occupational Therapy Research Hub has recently been formed with three Occupational Therapy staff with PhD, two staff undertaking doctoral study, and six Occupational Therapy PhD students, to support co-writing and development of proposals.

The unit is directly involved in the University ethics processes, with a number of staff as Ethics Panel members (including COX, DONOVAN). The unit (through COX) also has devolved responsibility from the Pro Vice Chancellor to act as the sponsor for the University on all NHS ethics applications by staff and students. Additionally, the unit is actively involved in the Integrated Research Advisory Service (IRAS) e-reference group since 2007 (COX).

*Facilities*

The unit is based at two of the university's main campuses; Lancaster (Bowerham Road) and Carlisle (Fusehill Street) and also has a base on the West Coast of Cumbria through CaChET. There are specific laboratory, individual and group spaces at each site, used for research, as well as the space used at a specific community and health research sites, such as hospitals. The Physiotherapy and Sport Laboratory, located in Carlisle, is dedicated to the investigation of human performance from a clinical point of view. The laboratory is used for the teaching of both Physiotherapy and sports and exercise therapy, with usage by physiotherapists undertaking their final year research module and potential use by Occupational Therapists. The unit also has a Human Performance Laboratory located at Lancaster, which is jointly used by physiotherapy and sport staff for research. Each includes a range of equipment and performance measures to investigate human performance and function. As the research undertaken within the unit is applied, this is mainly conducted in the field at a wide variety of regional (e.g. Cumbria Partnership Foundation Trust and Calderstones NHS Trust) and national NHS premises.

In addition, the *Medical Image Perception Group* has a dedicated laboratory at the

## Environment template (REF5)

Lancaster campus, housing Cumbria equipment funded through grants from Phillips Medical and NIHR. There are 5 dual screen computers suitable for image review and a reporting station with monitors calibrated to DICOM grey-scale display function standard for digital medical images. Eye-tracking experiments can be carried out using an EyeLink 1000 Desktop System (SR Research) with a chin rest. They also have a Tobii 1750 and a Tobii x50 remote system; both these systems are portable and can be transported to clinical sites for data acquisition.

### **e. Collaboration or contribution to the discipline or research base**

The Rehabilitation, Medical Imaging and Nursing, and Health and Social Care groups have active research roles in a number of NIHR programmes, for example COX supports the local Research Design Service (RDS) with an outreach service into Cumbria. Staff act as peer reviewers and panel members for a number of the NIHR funding streams such as Health Technology Assessment (HTA), Research for Patient Benefit (RfPB), Clinical Fellowships and programme grants. The unit contributes directly to the discipline through productive relationships with a range of important academic and practitioner organisations, including the professional bodies: the College of Occupational Therapists (COT), Chartered Society of Physiotherapy (CSP) and Society of Radiographers (SoR). Specific examples of such activities include:

- Nursing: Royal College of Nursing Standards for Education and Competence working group; Association of District Nurse Educators working group; Membership Co-ordinator and member of the Governing Committee of the Association of British Paediatric Nurses;
- Radiography: memberships of the College of Radiographers research group and working groups and contribution to the Approval and Accreditation Committee and Vice Chair of the Heads of Radiography Education Special Interest Group; involvement with the Association of Forensic Radiographers and UK Forensic Radiographer Response Team; membership of the Education Committee of the British Institute of Radiology;
- Occupational Therapy: membership of working groups and specialist sections for the College of Occupational Therapists and peer review of ethics proposals, use of research on occupational engagement in forensic settings being used in COT Forensic Practice guidance, which has recently been accredited by NICE; membership of the NICE Topic Expert Group developing the end of life quality standard; co-authoring of publications for the European Network of Occupational Therapy in Higher Education (ENOTHE); Chair of Scientific Programme Committee for COT annual national conference; board member of the Northern CFS/ ME Network Committee;
- Physiotherapy: contributions to working groups of the Chartered Society of Physiotherapy;
- Other: contribution to the Ambulance and Higher Education Institute Development Group; membership of the NIHR Service Delivery and Organisation (SDO) Review Panel; Committee membership Headway North Cumbria; working group membership of the National Research Ethics e-reference group; peer review of grant applications for the NIHR Health Technology Agency; Steering Group membership of the AHPRN network described in section d.

Staff within the unit have acted as peer reviewers for the Cognitive Science Society, for British Psychological Society publications, the *British Journal of Occupational Therapy* and for the *International Journal of User Driven Healthcare*. Additionally, staff have undertaken editorial positions for the *Journal of Neonatal Nursing*, the *British Journal of Occupational Therapy*, for publications of the Society and College of Radiographers and for the *Journal of Community Care*. COX is also an Associate Editor of the regional *Cumbria Partnership Journal of Research, Practice and Learning*. The journal acts as a conduit for Trust research and as a starting point for emerging researchers writing for publication, as it is directly linked to practice and includes contributions from researchers practicing in the NHS Trust.

The MRC funded multi-centre RCT (PACE Trial) that COX was part of and the NIHR programme that PHILLIPS was part of are indicators of national collaboration and interdisciplinary research. As an example, the former involved contribution of COX as a leader within the trial for Adaptive Pacing Therapy, production and piloting of treatment manuals, supervision within the trial and contribution to the resultant research papers (such as the Lancet, White et al. 2012).