

<b>Institution: Canterbury Christ Church University</b>
<b>Unit of Assessment: 3 - Allied Health Professions, Dentistry, Nursing and Pharmacy</b>
<p><b>1. Unit context and structure, research and impact strategy</b></p> <p><b>1.1 Unit context and structure</b></p> <p>The Allied Health Professions, Dentistry, Nursing and Pharmacy (UoA3) submission brings together health and social care research dealing with real-world, practice-driven, transformational challenges at individual, community and population level and on a regional, national and global scale. Unit staff are mainly from the Faculty of Health and Wellbeing (FHWB) with two Sociology colleagues from the School of Law, Policing and Social Sciences specializing in health inequalities and alternative medicine. The Unit includes two specialist centres: the Sidney De Haan Research Centre for Arts and Health (SDH Centre) with research impacting on participation in creative arts activities such as singing and dance for wellbeing; and the Institute of Medical Sciences (hosting Stem Cell Research and Advanced Bio-Engineering Laboratory, SCRABEL) with research impacting on regenerative medicine including cartilage repair to improve individuals' mobility.</p> <p>During the REF2021 period, the Unit benefited from improved research support through the appointment of a dedicated full-time FHWB Head of Research and Enterprise. This post developed and implemented the strategic approach of the Faculty and Unit. This support, and appointment of additional support staff, led to a nearly five-fold increase in research income (£849,559 in REF2014 to £4,003,000 by 2019-20). This success, and that of psychology which had been submitted within UoA3 in REF2014, led to a further Unit being formed into which psychology moved for REF2021. Additionally, UoA3 staff increased from 18 staff/13.90fte in REF2014 (including psychology), to 26 staff/18.2fte in REF2021 (excluding psychology).</p> <p>Partnerships, collaborations and interdisciplinary working are key strategic approaches (REF5a 2.4) and core to the Unit's research context, structure and function. Sustained securing of large interdisciplinary grant funds and delivering research programmes of high impact that include collaboration with other HEIs form evidence of success (REF5b 1.2.2).</p> <p><b>1.2 Achievement of strategic aims for research and impact</b></p> <p><b>1.2.1 Research themes</b></p> <p>Our three research themes for REF2014 of Optimising Individual's Health, Promoting Healthy Communities, and Building and Developing an effective Workforce or Workplace evolved over the census period to become the three research themes below. These themes overlap and are not necessarily discrete, reflecting the complex contexts of our research. For example, SDH Centre research is largely a series of participatory creative arts interventions to benefit individuals' health and wellbeing as well as being focused on communities.</p> <p><u>1. Individual Health and Wellbeing</u></p> <p>The focus of the research activity in this theme is on individual physical and mental health and wellbeing. It examines the impact and effectiveness of innovative clinical practice, coproduction and peer support in mental health care, clinical practice in dementia, stroke care and regenerative musculoskeletal medicine.</p> <p><b>(Akolekar, Chung, Houben, Kanegaonkar, MacInnes, Shetty, Stein, Watts)</b></p> <p><u>2. Community and Place</u></p> <p>Research work in this theme is concerned with the interaction between person and environment. It focuses on community development for healthy environments, the impact of creative group activities on health and wellbeing, professional regulation and professional practice on quality of care, suicide prevention, and cross-cultural and intergenerational issues in public health and health promotion.</p>

**(Clift, Fonchingong, Marsh, Melville-Wiseman, Price, Robinson, Sah, Skingley, Vella-Burrows, Wier)**

### 3. Population and Health improvement

This theme deals with contemporary issues in health and social care policies and practices. It focuses on implementing and improving the research of intervention programmes in rehabilitation and long-term care, prevalence of intimate partner violence, critical analysis of race and health in primary care, and a whole systems approach in workforce development and practice.

**(Burton, Coren, Hatzidimitriadou, Keval, Piper, Thurgate, Woznitza, Wright)**

#### **1.2.2 Unit research and impact strategic priorities**

The Unit's progress was guided by our REF2014 overarching submission objective of *building healthy and sustainable communities*, and is aligned to the University's Strategic Plan for Research and Enterprise 2015-2022 (REF5a 2.1). We continued and consolidated our research, and ensured growth of new initiatives. The three cross-cutting objectives summarized below formed continuous strands of planning and implementation of strategic priorities during this REF period:

A. Enhance research capacity building to encourage and sustain research activity of developing researchers and provide ongoing support for staff with Significant Responsibility for conducting Independent Research (SRIRs) in an interdisciplinary environment.

Key objectives to enable achievement were to (i) release staff time for research and (ii) researcher development (REF5b 2.2, 2.3), (iii) resource support through the internal Research Enterprise Support Funding (RESF, REF5a 4.2, REF5b 2.2, 3.1). Indicators of success are the increase in SRIR staff numbers (REF5b 2.1), increase in bidding activity (67 successful submitted bids in the REF period) (REF5b 1.2), and increase in Doctoral completions (17 in this REF period compared to 11 in REF 2014) (REF5b 2.2).

B. Extend and increase reach of our established research themes for significant impact, beneficial influence on people's lives and income generation.

Achieving an increase in numbers of Unit staff during the REF period has broadened our external funding base with small and large project income, including from NIHR (**MacInnes** £247k, **Clift** £250k), NHS KTP (Oxleas NHS Trust, **MacInnes** £194k) and Interreg Europe (European Regional Development Fund projects; **Hatzidimitriadou** total CCCU income £1.3m). Together this provided a nearly 5-fold increase in income on REF2014 of £849,559 in REF2014 to £4,003,000 by 2019-20, an achievement exceeding our target (REF5b 3.1, 3.2, 4). New facilities such as the £65m Verena Holmes Building (REF5a 4.2) provide space for interdisciplinary working and collaborations at the intersection of health, biomedical engineering and sports sciences, focused on practice-driven research on new technologies in healthcare (**Hatzidimitriadou**, **Shetty** REF5b 3.2). The newly-established Kent and Medway Medical School (KMMS) (REF5b 3.2), a joint and equal collaboration with the University of Kent, will be a key player in a planned expansion of medical/health-focused research. This will have major impact on the local economy with industry interests in medical technology and innovations, building on our current medical research (**Akolekar**, **Kanegaonkar**, **Shetty**, REF5b 1.3).

C. Work collaboratively with external research partners towards sustainable, transformational approaches from our research-informed therapeutic, interprofessional practice/workforce development and wellbeing initiatives.

The Unit proactively participates in the transformational potential of initiatives such as the NIHR Applied Research Collaboration Kent, Surrey and Sussex (ARC KSS). This national Government initiative supporting applied health and care research for local populations and health and care systems and hosted for Kent, Surrey and Sussex by the Sussex Partnership NHS Foundation Trust was launched in October 2019. Owing to our close collaboration (**Burton**, **Hatzidimitriadou**, **MacInnes**), the Unit's research and ARC

KSS Patient and Public Involvement and Engagement-informed (PPIE) research is already broadly aligned, with the aim of benefitting service development and provision. These sustained embedded collaborative structures, and the associated research of our Institute of Medical Sciences (IMS), offering postgraduate medical programmes, were central to the successful bid that became KMMS (REF5b 3.2).

By strengthening collaborations and strategically identifying new initiatives, Unit research has beneficially impacted on individuals' health and wellbeing globally, nationally and regionally (REF5b 2.2). For example, we developed a novel Autologous Chondrocyte Implantation technique to improve mobility (**Shetty**) in collaboration with a South Korean colleague. Strengthening UK and European links within the Interreg regions (**Hatzidimitriadou**) successfully encouraged further interdisciplinary collaborative research funding. Collaborating (**Clift, Skingley**) with community-based charities (ICS Singing and creative arts for health and wellbeing), our research contributed nationally to NICE guidance (2015 NG32, 2016 QS137). Research on translational gaps and boundary spanning-roles (**Burton**) with Medway NHS Foundation Trust is a regional initiative.

### 1.3 Future strategic aims for research

Our Unit's strategic vision for the next REF cycle is informed by the University's policies, and by external health and wellbeing policy drivers, environment and economy. Our Unit's commitment remains to enhancing our health and social care research, dealing sustainably with real-world, practice-driven, transformational challenges which beneficially impact at individual, community and population level and on a regional, national and global scale (REF5b 1.1). We plan to maximise the Unit's academic profile by building further on our diverse scientific community of health, medical and social care academics and professionals. A key ambition is to capitalise on the Unit's rich interprofessional heritage with high-quality interdisciplinary research activity. We aim to strategically optimise collaborative opportunities with KMMS and the School of Engineering, the use of the newly-built University state-of-art laboratory and simulation facilities in the Verena Holmes Building, and external opportunities to extend our research work in emerging areas including digital health and social prescribing. We will sustain and enhance our strategic research areas (REF5b 1.2) that aim to benefit health, care and individuals' wellbeing, and service provision, in co-produced engagement with external stakeholders who also include service users, family carers and community agents. Central to our future strategic planning is further enhancement of the quality, impact and academic standing of the Unit's work.

The Unit's future strategic aims will be achieved by:

#### i. Sustainable Capacity Building

Vital for the Unit's continuing growth and sustainability is staff development for research leadership, successful grant bidding, diversification of activity and growth of PI expertise and project management (REF5b 2.2). We will continue to access the Research & Enterprise Support Fund (RESF) to release 0.2fte time for research, project-funding-related secondments (e.g. in EU Interreg projects, **Hatzidimitriadou**) and for research leadership experience. We will encourage growth of national and international impact in existing areas of research excellence, e.g. mental health care (**Houben MacInnes, Marsh**, ICS *The care and role of service users and carers in mental health settings*); participatory arts in health and wellbeing (**Clift, Coren, Skingley, Vella-Burrows** ICS *Singing and creative arts for health and wellbeing*); and healthcare improvement (**Burton, Hatzidimitriadou, Stein, Woznitza**). We will promote capacity-building in emerging research areas e.g. digital health care and robotic assistive technologies' training for workforce and service users (**Akolekar, Hatzidimitriadou, Kanegaonkar, Shetty, Stein**) as well as coproduction and social prescribing in public health and mental health care (**Burton, Chung, Clift, Keval, MacInnes, Price, Sah**). New researchers and PGR students will be encouraged to work within our current and new research priority areas (REF5b 1.2.1).

#### ii. Enhancement of Quality Assessment

The Unit is in an upward trajectory in terms of research culture that enhances quality in originality, significance and rigour in research outputs, including quality assessment systems in operation including mentoring and peer-review. Applicable to all our research themes (REF5b 1.2.1), we will continue a culture of research integrity and research governance. We will ensure that equality, diversity and inclusivity (REF5b 2.4), and PPIE (Patient and Public Involvement and Engagement) (REF5b 1.2.2, 2.3, 2.4) are embedded in all stages of research activity and reflected in high-quality research outputs and submissions for research funding that evidence impact. We will continue to access Unit staff networks for external intelligence, e.g. **Melville-Wiseman** – Chair of Faculty Research Ethics Panel and Expert Panel member of the NHS Health Research Authority Social Care Research (HRA SCR) Ethics Committee. We will aim to balance the effort to publish high-quality academic outputs with the drive for publications that mobilise knowledge and are translated into practice improvements by improving dissemination of practitioner-targeted insights.

### iii. Growth of National and International Impact

The Unit's researchers play a key role in research and practice in the regional health and care landscape. Guided by our research themes (REF5b 1.2.1) and optimising existing and new infrastructure (REF5b 3.2), we will extend formal partnerships with NHS and other stakeholder organisations (e.g. ARC KSS, **Burton, Hatzidimitriadou, MacInnes**). We aim to further strengthen our national and international interdisciplinary research, building on sustained collaborations. For example, our EU Interreg project partnerships have already led to further successful grant applications. These include ADAPT, a research programme to develop innovative solutions to improve the home care, wellbeing and independence of wheelchair users and develop relevant innovative workforce e-training, which led to the development of the MOTION project. MOTION is a research programme to develop lower limb robotic assistive technology to support mobility of children with cerebral palsy and training of workforce and parents in its use. Unit staff with partners from CASCADE consortium (a programme aiming to embed a holistic and sustainable model of integrated dementia care in the community) also secured funding for the EMPOWERCARE project. This aims to co-create social innovation, to make local services more efficient and effective to address societal challenges in the 2Seas area (**Hatzidimitriadou, Wright**). IMS and KMMS form a further focus for extending international collaboration, for example in practice-driven regenerative medicine and musculoskeletal tissue engineering (**Shetty** who was awarded the prestigious Royal College of Surgeons Hunterian Medal 2017), and other Unit staff research into cross-cultural and intergenerational issues in public health and health promotion (**Fonchingong, Keval, Robinson, Sah**).

### iv. Focused PGR Portfolio and Supervision

Opportunities to develop further the Unit's research portfolio are present with the recent introduction of new PGR pathways – MA/MSc by Research, PhD by Publication and PhD by Portfolio – which are better suited to health and social care practitioners aspiring to clinical academic careers. Coupled with this, the Unit will continue to have a focused approach in our PGR offer, building on our research themes (REF5b 1.2.1) with expertise in existing areas of mental health (**MacInnes, Marsh**), participatory creative arts in health (**Clift, Coren, Skingley**), healthcare improvement (**Burton, Chung, Stein, Woznitza**), biomedical research (**Akolekar, Kanegaonkar, Shetty**). The Unit will also extend to new but aligned areas of coproduction, social prescribing and digital health (**Coren, Hatzidimitriadou, Melville-Wiseman, Wright**), with new approved PhD supervisors. We will optimise opportunities by providing Faculty scholarships and bursaries linked to key external bodies and networks such as ARC KSS, with a view to increasing the caliber of research students. We will continue research supervisor development.

### v. Sustainable Research Income

Applicable to all research themes (REF5b 1.2.1), the Unit will sustain and enhance its dynamic bidding activity based on established regional, national and international partnerships and collaborations. In line with the interprofessional and interdisciplinary character of our Unit, we will explore new grant opportunities in collaboration with other Units' researchers



within and outside of the University, and optimise opportunities with KMMS and ARC KSS. A key driver to future research income aspirations will be the sustainability of current research areas to allow maturity and expansion of current activity, as well as uptake of new opportunities e.g. KMMS collaborative links with industry.

## 2. People

### 2.1 Staffing strategy

The Unit's staffing strategy is to develop research capacity through internal staff development and promotions, supplemented by new Reader, Professorial, joint clinical academic appointments and external collaborations. Of notable relevance are the capacity-building opportunities offered by the SDH Centre secondments for Faculty staff (e.g. for the School of Allied and Public Health Professions) and University colleagues (e.g. with the School of Creative Arts and Industries) to develop their research career in respective areas. These opportunities are also provided by the IMS, supporting clinical academic appointments with secondments to IMS, and our Stem Cell Research and Advanced Bio-Engineering Laboratory (SCRABEL) from the School of Life Sciences. Our strategy is informed by the UK Researcher Development Concordat principles on Environment and Culture, Employment, Professional and Career Development, and staff are supported through the University's development opportunities - SPARC, AURORA and Researcher Development Programme (REF5a, 3.2, 4.2).

Success indicators for the Unit's staffing strategy include an increased number of SRIR staff entered for REF2021, from 18 staff/13.90fte in REF2014 (including psychology) to 26 staff/18.2fte in REF2021 (excluding psychology, who are now within a new Unit) which directly contributed to a nearly 5-fold increase in external income (REF5b 3.1). Staff capacity-building remains a key mechanism for our future strategy (REF5b 1.3, 2.2).

### 2.2 Staff Development

Unit staff benefited from the implementation of the University's major change initiative and launch of the Strategic Framework (2015-2022) (REF5a 2.1) which allowed the establishment of School/Faculty-wide structures for researcher mentoring, grant development support and internal peer review of submitted grants and outputs. A consistent approach to research mentorship was introduced in the annual appraisals with the use of Individual Research Plans (IRPs) reviewing current and future research activities and outputs. The review of IRPs was instrumental to the allocation of RESF and growth of both ECRs and experienced researchers. For example, **Chung's** ECR RESF funding, as a start-up, was associated with a successful bid to the College of Occupational Therapists' Elizabeth Casson Fund (2017-18) for a collaborative project on dementia with Kent County and Medway Councils. Staff who benefited from this approach also acted as role models for developing researchers. Use of IRPs also increased the ability to monitor EDI issues (REF5b 2.4), as noted in the SWAN Athena Bronze awards of the two Schools to which Unit staff are affiliated (School of Allied and Public Health Professions; School of Nursing, Midwifery and Social Work).

The beneficial effect of the approach to include staff time-release support for doctoral studies was five Unit staff completing doctoral degrees during the census period, and all but one Unit staff now holding a doctorate. There is a growing number of other staff undertaking doctoral study currently who are expected to contribute to the next REF cycle. The Unit has achieved a 31% increase in research supervisors, and increased doctoral student completions (n=11 REF2014, n=17 REF2021). During this REF period, Unit staff became main PhD supervisors (**Piper, Sah, Thurgate, Wier, Woznitza**) mentored by experienced supervisors.

Aiming to sustain a strong, inspiring research community, the Unit has benefited during the REF period from successful key appointments and promotions. These included six Professorial appointments (**Akolekar, Burton, Hatzidimitriadou, Kanegaonkar, MacInnes, Shetty**) and three Reader posts (**Coren, Marsh, Robinson**) who also supported our Unit researcher and PhD supervisor development. **Akolekar's** professorial post is strategically funded by Health Education

## Unit-level environment template (REF5b)

England Kent Surrey and Sussex (HEEKSS) to support research promotion and research collaboration e.g. with clinical academic careers, evidencing confidence in the Unit's work. Also with a specific strategic purpose, the Professor of Health Services Research appointment (**Burton**) builds on implementation science and improvement research following our REF2014 submission. The Unit's joint clinical academic appointments (**Akolekar, Kanegaonkar, Shetty, Woznitza**) encourage synergies with the health and social care sector at regional and national level, and benefit from collaborations with clinical academics who enrich our research and teaching environments. Being closely engaged with practice partner organisations facilitates a grounded understanding in practice realities relevant to research.

The majority of our Unit staff hold a professional qualification, have teaching and research contracts and have a minimum of 0.2fte for research and/or knowledge exchange activity (University Workload Profiling, REF5a 3.1) and this is in addition to funded time where there is external project income. ECRs are mentored and offered training through secondments to Research Centres (past ECRs, **Piper, Price, Thurgate, Wier, Woznitza**); and large projects, for example in our EU Interreg projects (past ECRs **Chung, Stein, Wright**). Part-time or full-time staff recruited to specific projects as Research Assistants and Research Fellows also benefit from the Individual Research Plan (IRP) appraisal system and are equally encouraged to access University resources for their development. The SDH Centre encourages researcher development through secondments within FHWB and cross-Faculties. For example, Dr Angela Pickard seconded from the School of Creative Arts and Industries developed high impact outputs and research income as given in CCCU UoA33's Environment submission. The beneficial impact of our approach to ECRs' careers is exemplified by **Woznitza's** success as a joint clinical academic appointment (CCCU/NHS Homerton University Hospital Foundation Trust). In the REF period he completed his PhD, secured external funding (Cancer Research UK, NHS HEE), and has become Clinical Director, Radiographer Reporting HEE London.

Aiming to sustain a strong research community, Unit staff also encourage students to be involved in research projects via the University's research internships scheme, concurrently intentionally developing the Unit staff research leadership experience. During this REF period, a number of Unit staff ran successful internships within projects in collaboration with key external stakeholders, e.g. NHS Trusts and Local Authority Councils. This offered undergraduate/postgraduate students the opportunity to develop their research skills, to contribute to research outputs and grant applications as well as to successful impact/dissemination activity (**Akolekar, Burton, Chung, Hatzidimitriadou, MacInnes, Marsh, Wier**).

Internally, we actively encourage interdisciplinary research and have SRIR staff who are research degree supervisors in subjects that include Psychology, Social Sciences and Sports Science. In addition, we hold regular internal events to encourage a vibrant, supportive collegiate research community – bi-weekly Lunchtime Research Seminars and an annual ECR Research Festival. Internal events also provide researcher development role-modelling for sharing and research dissemination.

### 2.3 Support and training of PGR students, and their supervision

The University's Graduate College leads PGR student training (Researcher Development Programme, RDP) and processes including employability (Department of Enterprise, Employability and Research Development, REF5a 4.1). Unit staff contribute to the RDP, and to the Unit's Research Seminar series along with PGR students. Jointly with the Graduate College, the Unit provides an academic home for PGR students. The Unit staff actively seek funding to support PGR students' study. A recent collaborative outcome is a NIHR ARC KSS PhD scholarship to develop health and social care that includes dementia, which sits well within the Unit and ARC KSS research themes.

Our Unit PGR students now have a dedicated study environment, and all have ready access to our Unit/Faculty hot-desks. Unit EU and International PGR students, and many UK students study

at a distance, and during Covid-19 lockdown it has become the standard for all.

Identified in REF5a 3.1, the University Mental Health and Wellbeing Framework, co-produced with students and staff, provides a structure for Unit staff to build on. Referring to the University's Access to Student Support guide, Unit staff are supported in supporting students. On a practical level Unit staff, for example, follow 'keeping in touch' with students who have caring responsibilities, ill-health, are on parental leave, or similar, and support their return and adjust meeting dates for family and other life requirements. Engaging also with taught students, and with most of the Unit staff having Professional, Statutory and Regulatory Bodies (PSRB) registration, compassionate leadership is an expectation embedded in our work. Unit staff are affiliated to our two Schools which hold Athena Swan Bronze awards, so equality, diversity and inclusivity are a central tenet for student support, to help students coping with a disability or a learning difficulty, those dealing with bullying and harassment or discrimination.

We actively encourage PGR student applications through external stakeholder engagement, including ARC KSS, identifying real-world practice-driven research questions. Unit staff promote research degree options that may also be fundable and that are relevant to Government, regional and local policies through their networks that include NHS Trusts and Local Authorities. We are aware through the Faculty Schools' Athena Swan submissions that a majority of our PGR students are white, reflecting the employment demographics in health and social care regionally. In line with University strategic plans, the aspiration to increase our PGR students with protected characteristics is gaining pace. Unit staff (e.g. **Fonchingong, Keval, Sah**) are role-models who conduct research on race issues that feature in the University's 'Closing our Gap' campaign. This is a campaign to reduce the attainment gap between white and BAME students. The majority (90%) of our PGR students are part-time and usually work within the public services for the majority of their time, nevertheless they, like full time students, are encouraged in their wider career development pathway e.g. student interaction such as teaching (REF5a sections 2.4, 4.1).

Unit staff are expected to supervise PGR students and we actively encourage interdisciplinary supervision (REF5b 2.2) to reflect the diverse background of this Unit's staff profiles and that of our students. Due to the diverse subject areas of supervision, we have joint supervisory panels with colleagues across Faculties and Schools as well as other UoAs. Unit supervisors attend the University's supervisor development programme, follow Graduate College requirements (REF5a 3.3) and are mentored by an experienced supervisor.

#### **2.4 Equality and diversity**

As well as their PSRB registrations requiring upholding of equality, diversity and inclusivity (EDI), Unit and Faculty staff also undergo EDI training and, where relevant, work to ensure students meet NHS values. The Faculty's two Schools gaining Athena Swan Bronze awards supported the Unit's EDI plans. Gender data shows good progress for REF2021 (Institutional Equality Impact Assessment, EIA) with n=15 (58%) female and n = 11 (42%) males as SRIR staff (total n=26). This data represents more closely the preponderance of women (n=146, 71%) in the Faculty compared with REF2014 n=5 (45%) female and n=6 (55%) male in REF2014. Additionally, Research Governance requirements within the University R&D (REF5a 2.4) and the Unit, aim for EDI and PPIE to be embedded in study design, delivery and completion. Unit staff are also proactive in their research expert areas in promoting EDI issues. For example, **Fonchingong** is engaged in research connected to the United Nations Research Institute for Social Development (UNRISD) and International Centre of Research and Information on the Public, Social and Cooperative Economy (CIRIEC) on social and solidarity economy, in improving social welfare provision for disadvantaged groups.

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

Review of the Unit's implementation of strategic plans takes place through University and Faculty quality assurance processes for research introduced since the last REF period. Specifically, Unit planning is embedded in the University's Research and Enterprise Quality Improvement and

Enhancement (REQIE) process through delivery of the Faculty Research and Enterprise Portfolio Plan (FREPP) (REF5a 2.1, 4.2). This in turn informs the annual business planning process and allocation of Research and Enterprise Support Funding (RESF) to Faculties (REF5a 4.2). These funds were used within the Faculty, Schools and Centres to support the Unit's research strategy as detailed in REF5b 1.2.2.

### 3.1 Income

A strategic aim for the Unit was to sustain and increase income and we have exceeded our targets. Unit income for REF2014 was £849,559 and for REF2021 £4,003,731, a nearly 5-fold increase.

Succeeding with our strategic plan for staff development (REF5b 2.2), we have increased the number of successfully funded projects (67 over the REF period), including a number of large-scale grants, as noted below, in line with our strategic aspirations. These are from diverse sources, reflecting the breadth of our research and its reach. Our strategic decision to enhance our interdisciplinary research, increase research funding and expand national and international research led to EU funding being a particular focus for success. The Unit's EU Government Bodies funding (£1.3m) during this REF period is predominantly from five EU Interreg Europe interdisciplinary collaborative projects (**Hatzidimitriadou** European Regional Development Fund, CCCU income £1.3m) with regional and EU stakeholders that include service providers and industry. These projects are sequential, evidencing sustained income generation from this source, with the potential impact of influencing regional industries e.g. with development of robotic wheelchair technology associated with the Interreg Channel ADAPT project. The Unit also gained funding from UK Central Government, Local Authorities and the NHS (£846k). These include NIHR grants (**Clift** £250k, **MacInnes** £247k) and a KTP initiative with Oxleas NHS Trust and prison service (**MacInnes** £194k). As well as benefitting regional service provision, detailed in our ICS *Enhancing the care and role of service users in mental health settings*, Unit research is already being translated e.g. to other prison services in England and Wales (**MacInnes**). IMS/SCRABEL has received £250k support from HEE KSS, to examine the use of stem cells in regenerative medicine, co-led by NHS Consultants from East Kent Hospitals University Foundation Trust and Medway NHS Foundation Trust.

Unit staff research with UK charities has been sustained over the REF period (£541k) with beneficial impact for individuals and service provision in their communities. One example is **Woznitza's** (CRUK, £95k) medical imaging research for lung cancer. Other examples are detailed in our ICS *Singing and creative arts for health and wellbeing*. Another major funding success during this period which is key to the Unit's strategic plan is the Oak Foundation funding (**Clift**, £748k) which supported the research programme of the Sidney de Haan Research Centre for Arts and Health. **Clift**, **Coren**, **Skingley**, **Price** and **Vella-Burrows** are conducting projects funded by the Oak Foundation grant. A further Oak Foundation grant has been secured for the period 2020-2026 to enable sustainability and further growth of the SDH Centre.

Importantly for the future of the Unit (REF5b 1.3), the research environment provided by these projects underpins future collaborations with other UoAs and newly-established Schools (for example, School of Engineering, Technology and Design, and KMMS) with anticipated impact for the regional and national economy through links with industry and public sector bodies. An example of this collaborative environment and the anticipated impact is the MOTION project, where Unit staff are collaborating with Sports Sciences (UoA24) researchers and have developed promising partnerships with NHS Trusts and industry partners working in the field of children with neurodisabilities and rehabilitation practice. The team will publish interdisciplinary outputs and collaborate with regional stakeholders e.g. Kent County Council's Public Health team and ARC KSS, to connect the project's gait analysis normative and feasibility data with regional databases. This will inform regional health and social care policy and practice development (REF5b 3.2).

Internal allocation of RESF has supported Unit strategic aims for enhanced and sustained



research capacity (REF5b 2.1). Funding has been directed predominantly to support researcher development of Unit staff (and wider FHWB research-active staff) in leading bidding activity, project development and delivery, sustaining and increasing research income, and generating high-quality outputs and impact. ECRs' funding success with smaller projects is indicative of the impact of this strategy (e.g. **Chung** £8k, **Vella-Burrows** £14k each with charities' funding early in the REF period). The Unit has also benefited from University capital funding as discussed in REF5b 3.2.

### 3.2 Infrastructure

Unit staff benefit from working within an interprofessional, interdisciplinary environment embedded across our provision that includes research. The University's investment (REF5a, 4.2) in the new STEM facilities is immensely beneficial for Unit staff, creating an environment and space that encourages interdisciplinary research and that furthers subject and profession-specific research and training. KMMS and the School of Engineering, Technology and Design provide further opportunities for learning and researching together and linking with industry. We have extant research projects that exemplify our preparedness and commitment to this strategy with our SCRABEL staff working collaboratively on bio-reactors for tissue engineering (**Akolekar, Kanegaonkar, Shetty**) with the School of Life Sciences (Mylona) and the School of Engineering Technology and Design. Another example is an App development for vestibular function assessment (**Kanegaonkar**) within our IMS Medical Innovations. Our infrastructure enables interdisciplinary collaborations within the University for PGR student supervision (REF5b 4).

We aim for a sustainable infrastructure for our staff and students' wellbeing that recognises diversity. Aiming for a personalized approach, people (staff) are accessible. We aim for online resources to fit IT platforms that students use globally, similarly for students' access to our library services (REF5a). The Graduate College and University Department of Enterprise, Employability and Research Development (EE:RD) support Unit staff and PGR student research careers (REF5a 3.2, 4.2). The Post Graduate Research Experience Survey 2020 (PRES) had a University-wide 15% response rate (reduced from 2019, 32%). Although PGR student engagement dropped, students were increasingly satisfied with space within the resources theme (up by 9%).

Enabled by our state-of-art infrastructure to meet strategic plans, the Unit staff work collaboratively and effectively with external national and international partners, evidenced through the Interreg projects and examples of collaboration with NHS Health Trusts (e.g. Medway NHS Foundation Trust, East Kent Hospitals University NHS Foundation Trust, Oxleas Foundation NHS Trust) on a joint strategic approach for Clinical Academic Careers (**Akolekar, Burton, Hatzidimitriadou, MacInnes, Marsh**).

### 3.3 Facilities

The University has invested considerably in facilities (£150m Estates Master Plan, REF5a 4.2) with benefit to the Unit assisting our strategy for interdisciplinary research and furthering profession and subject specific research. Unit senior staff (**Burton Hatzidimitriadou, Thurgate**) were involved in the design of the interdisciplinary space formed by the new Verena Holmes Building, with access to instrumentation and equipment within. Collaborative work and partnerships, as already mentioned in previous sections, will be strengthened and enabled by this innovative facility, especially in relation to digital health care, regenerative medicine and biomedical research (work linked to current EU Interreg projects on technological and social innovations). Collaborating with Natural and Applied Sciences (NAS, UoA5), Dr Mylona has been seconded 0.5fte to manage SCRABEL since 2019 and an outcome is the early-stage project developing bio-reactors for tissue engineering. The Building houses the clinical simulation/immersion labs and instrumentation relevant to profession and subject-specific research, as well as routine research equipment such as digital recorders.

Broad interdisciplinary engagement and accessible research resources are an outcome of robust partnerships the Unit has with NHS Trusts and ARC KSS (**Akolekar, Burton, Hatzidimitriadou,**

**Kanegaonkar, MacInnes, Thurgate**), as well as local Authorities (**Melville-Wiseman, Sah, Vella-Burrows, Wright**), charities and other professional and community organisations (**Chung, Marsh, Stein**). Such partnerships facilitate engagement with participant groups and instrumentation access e.g. radiography (**Piper, Woznitza**). Outcomes enable a collegiate extension of facilities available.

The University Graduate College provides space for researchers, and in addition, the Unit has a dedicated location with hot-desks for staff and students. Unit staff and students benefit from extensive learning resources via CCCU and the Universities at Medway campus libraries, the latter shared by three Universities and their differing subject areas. Unit staff aim to personalize learning for PGR students, and those studying at a distance can have tutorials and other supervision using a range of IT platforms including Microsoft Teams video, Zoom, Skype, telephone or email according to what works and is secure in their locality.

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

Since REF2014, in accord with the University's Strategic Framework 2015-2022 and the University Strategic Plan for Research and Enterprise 2018-2023, we have built, year-on-year, on existing partnerships and collaborations to meet our strategic priorities (REF5b 1.3) locally, regionally, nationally and globally. We actively sought new opportunities, and successful impact is demonstrated through increasing numbers of Unit staff (REF5b 2.2) and income generation (REF5b 3.1).

The Unit successfully proactively supported the development of the regional research environment since REF2014. In the absence of a Collaboration for Leadership in Applied Health Research and Care (CLAHRC) in the south-east of England, or other support structure, we laid the foundation stones for formal collaborations such as that with Medway Foundation NHS Trust. The formation, early in the REF period, of the Kent and Medway Health Partners with its research Fellowship group to encourage practitioners as researchers, supported evidence of established collaboration for research. Together with our IMS, this collaboration formed the key building blocks for the successful bid that became the Kent and Medway Medical School. Other success indicators of effectively developing these early stage collaborations include the formation of the NIHR ARC KSS (led for CCCU by **Hatzidimitriadou** with **Burton, MacInnes**) and the Joint Research Operation Group (**Burton, Hatzidimitriadou, Thurgate**). This latter group brings together NHS and HEIs' research infrastructure and support systems to harness current strengths and aligning Research and Innovation support and networking. The Unit is also a founding member of the Kent and Medway Project Review Group formed in March 2020 by the Kent and Medway NHS partners, Universities and Local Councils, in response to the pandemic crisis, to advise on and mentor clinicians' research project development.

Our strategic priorities (REF5b 1.2.2) relate to widening the influence of our research in response to national and international priorities:

- Our EU Interreg programmes (**Hatzidimitriadou**), large-scale collaborative projects, have yielded some of the outputs submitted to this REF period. However it is expected that they will be instrumental in the future strategic planning of the Unit in the growth of established and new areas of research work such as digital health and social prescribing (REF5b 1.3). Outputs linked to the collaborative pan-European DOVE prevalence study on intimate partner violence (**Hatzidimitriadou**) have impact for practice advice considering men and women as both potential victims and perpetrators when approaching intimate partner violence.
- Unit staff hosted the first of its kind international research conference in 2017 on Critical Suicidology (**Marsh**). This interdisciplinary collaboration has been sustained into future years and into other countries, with the benefit of developing collective and community-driven approaches rather than the current "one size fits all" approach that appears to have limitations.
- The key national Joint University Council Social Work Education and Research Conference in 2018 (led by **Melville-Wiseman**) hosted several launches including the Research Strategy for Adult Social Work in England and Joint University Council Research Strategy for Social Work in partnership with the Association of Professors of Social Work.

## Unit-level environment template (REF5b)

- The SDH Centre contributed to NICE Guidelines (2015 NG32) and 2016 NICE Quality Standard QS137 (**Clift**, *ICS Singing and creative arts for health and wellbeing*) informing practice. Collaborating with reputable international organisations such as the Oak Foundation, the Centre has been awarded repeat funding from this international Foundation to support its future participatory arts in health research.
- Our medical imaging research (**Woznitza, Piper**) exemplifies Unit staff collaborative research for national charities and Health Education England that benefits service design and delivery through more rapid, effective and safe medical imaging report provision.

Within the Unit, the SDH Centre successfully engages with service users, service providers with regional and national beneficial impact, and international reach for individuals and communities (**Clift, Price, Vella-Burrows**). The impact of the SDH Centre's collaborations is demonstrated through a strong network of stakeholders, with research significance shown in translating the research to their locality and context (as detailed in the *ICS Singing and creative arts for health and wellbeing*, where charities have taken up the research seeing benefit for their members). The SDH continues to lead in the development of the field of participatory arts and health scholarship and research. For example, **Clift** was instrumental in establishing the Royal Society for Public Health (RSPH) Arts, Health and Wellbeing Special Interest Group in 2014, and the Repository for Arts and Health Resources in 2015 (funding from Lankelly Chase Foundation and Oak Foundation).

Nationally, Unit staff have roles for their PSRBs and other organisations to support and extend professional and discipline development and initiatives, and the Unit benefits from this synergy. For example, **Chung's** experience as a member of the Expert Panel of the Forum of Mobility Centres; **Akolekar's** as Clinical Lead for Research and Innovation, Medway NHS Foundation Trust; **Kanegaonkar's** as Speciality Lead role for HEE KSS and within the KSS Clinical Research Network; can feed into our curricula and help ground our research to meet real-world drivers. Being commissioned for key research for PSRBs (**Melville-Wiseman** – Regulatory Body response for victims of sexual abuse; **Wier** - midwifery statutory supervision) demonstrates Unit staff research has a national influence for discipline-specific policy.

Individual Unit staff have identified opportunities through their networks, extending our range of potential influence. As well as major regional, national and international initiatives (examples above), we retain local and regional projects, and collaborative examples include:

- with NHS organisations and Local Authorities in both research and education (**Burton, Chung, MacInnes, Thurgate, Vella-Burrows**), we have a key role in the regional economy. Working collaboratively on the Ebbsfleet Garden City Healthy New Town (**Hatzidimitriadou**), we referred to existing communities and services, and reached out to marginalised communities and individuals. Beneficiaries include service providers and community organisations around effective service provision. Our research expertise in social inclusion and health inequalities in the UK and overseas positions us well to lead and contribute effectively to this development with indicators of success being that several of the emerging Ebbsfleet Garden City projects still continue.
- research into the Nursing Associate role (**Thurgate**) impacted on regional developments in the implementation of this role in services.
- with other HEIs and national organisations, e.g. the ADAPT EU Interreg Channel project on development of smart wheelchairs for people with disability anticipates impact on the economy for around 60 companies manufacturing parts for these wheelchairs. Additionally, the transmission of training in Assistive Technologies and their use in health and social care practice will reach more than 15,000 health / care staff in the Channel area, with CCCU/Unit staff (**Hatzidimitriadou, Stein**) leading on the development and provision of this innovative workforce development, providing an indicator of the potential impact of this project.
- The impact of our research (**Marsh**), working with National Rail and other HEIs has extended research on suicide prevention through engaging with Coastal Communities and the University sector.
- Internal collaborations to extend reach and beneficial impact include secondments (e.g.

Arts and Humanities colleague, Pickard 0.2fte, to Sidney de Haan projects **Clift, Vella-Burrows**), and Sports Sciences biomechanics experts (Coleman, Brown) in the EU Interreg 2 Seas MOTION project (**Hatzidimitriadou**). As noted in REF5b 1.3 (future) and 3.1 (income) further internal collaborations are planned optimising use of the Verena Holmes building as the academic home of interdisciplinary subjects of relevance to this Unit that include Medicine and Engineering.

- We successfully supported collaborative research through the University's Student RKE Internships Scheme with beneficial impact for service provision e.g. research on translational gaps and boundary spanning-roles (**Burton**) with Medway NHS Foundation Trust on loneliness in acute care for cancer patients.
- Similar work on diabetes primary care provision is supported through the same internships scheme and builds on the DWELL Interreg project work, strengthening research partnerships with this NHS Trust. DWELL is a programme enabling 1,000 patients in Europe and the UK with Type 2 diabetes to access tailored support, empowering them to self-manage their condition and improve their wellbeing (**Hatzidimitriadou**).
- Unit staff working with Oxleas NHS Trust on forensic psychiatric services for older adults exemplifies a long-standing collaboration with repeat funding (**Houben, MacInnes**), in ICS *The care and role of service users and carers in mental health settings*.

Unit staff external activities are intentionally diverse reflecting the range of our Unit's disciplines and optimising intelligence and experiences brought back to the Unit. These include: a role in a Community Interest Company (**Burton** - developing a Community Interest Company to accelerate the impact of funded research); national level roles for NHS and other organisations (**Woznitza** – Clinical director, Radiographer Reporting HEE London; **Burton** – Improvement Science Fellow, Health Foundation, Health Education England; **MacInnes** – Research Working Group NHS England Adult Secure Clinical Reference Group); national level contribution to Special Interest Groups (**Thurgate** – Council of Deans of Health associate practitioner network, NHS England and NHS Improvements; **Piper** - national Special Interest Group in Medical Image Interpretation); and regionally (**Shetty** - Founder and Director of the Kent Knee Unit based at the Spire Alexandra Hospital).

Unit staff contribute to the development and enhancement of their discipline and professional areas in ways that again reflect the diversity of our Unit's research. For example, Unit staff are members of expert panels (**Hatzidimitriadou** - External expert advisor/collaborating stakeholder, EU project "CARE: Common Actions for REFugees and other migrants' health"; **Burton** - Associate Member to the National Institute for Health Research's commissioning panel for its Health Service & Delivery Research Programme, and expert panel member to the Dunhill Medical Trust); contribute to journal editorial boards (**Coren** - Editor, Cochrane Developmental Psychosocial and Learning Problems Group, **Chung** – Deputy Editor for World Federation of Occupational Therapists); contribute to regional and local charities (**Skingley** - collaboration with Canterbury and District u3a for a research project); and review Research Council grant applications (**Chung, Clift, Coren, Hatzidimitriadou, MacInnes, Stein** – NIHR programmes reviews). Staff have national roles for their Professional Bodies (**Woznitza** for the College of Radiographers Diagnostic Imaging Advisory Group); and roles regionally supporting NHS developments (**Kanegaonkar** - ENT Speciality Lead within the Kent, Surrey and Sussex (KSS) Clinical Research Network).

This dynamic collective expertise and intelligence shapes our research strategy, research-informed teaching and research environment. Continuing dialogue is cultivated through Unit research group discussions, seminars, events as well as formal University quality assurance structures.