

Institution: University of Glasgow
Unit of Assessment: Unit 2; Public Health, Health Services and Primary Care
a. Overview

The forefront of our strategy post-RAE 2008 was to capitalise on our vibrant research community and its opportunities for interdisciplinary working. We have succeeded in this ambition through establishing in 2011 the flagship research-intensive Institute of Health and Wellbeing, whose Director is Professor Dame Sally **Macintyre**. This is one of seven priority areas identified during a major restructuring at the University of Glasgow. It includes researchers from the College of Medical, Veterinary and Life Sciences, and the College of Social Sciences. Creation of the Institute has further strengthened our environment, ensuring vitality and robust sustainability in all our strategic research areas. Its leading experts have a shared focus on improving population health and quality of life, and reducing health inequalities, using collaborative and inter-disciplinary approaches, and have been influencing guidelines and policy internationally. The new Institute has brought together clinical and social scientists, in order to enhance research interdisciplinarity, and promote strong multidisciplinary research collaborations. This has led to:

- **increased** prestigious research grant expenditure to **£36m (£20.2m** from Research Councils) in 2008-13, representing **growth** in annual research income of **32.5%** over the REF period,
- **impactful outputs** e.g. **Mercer, Watt, Wyke** (Lancet Jul 2012; citations: 103), **Mitchell, Popham** (Lancet Nov 2008; citations: 172), **Gillberg** (Am J Psychiatry Nov 2010; citations: 106), **Pell, McConnachie** (NEJM Jul 2008; citations: 186), **Pell, Mackay** (NEJM Sep 2010; citations: 79),
- **recruitment** of eight world leading and rising academic staff (see section c.),
- an **increase** in the number of **doctoral students** attracted to our vibrant research environment with currently 170 registered, and 69 new fellowships awarded since 2008 and 6 more at advert.

Staffing has been at the centre of our strategy and a key action of the Institute has been the integration of the internationally respected Medical Research Council (MRC)/Chief Scientist Office (CSO) Social & Public Health Sciences Unit (SPHSU) with research groups of the former Division of Community Based Sciences, and the Robertson Centre for Biostatistics and Clinical Trials. Important new features include:

- establishment of a **shared, focussed research strategy**, with clear research priorities,
- establishment of a **public engagement and knowledge exchange group**, and strategy,
- promotion of **interdisciplinarity and collaboration**, with the addition of social scientists,
- **integration** of the Mental Health and Wellbeing group and the Robertson Centre for Biostatistics and Clinical Trials with groups within the previous Division of Community Based Sciences, and the transfer of the MRC/CSO SPHSU into the Institute and University,
- **development**, with the growth of the Section of Public Health and Health Policy into two separate groups: Public Health, and Health Economics and Health Technology Assessment,
- **early career support**, with the establishment of a range of mechanisms (see section c),
- **broadening membership**, through establishing Institute associate and affiliate memberships for staff across the University, and externally e.g. Glasgow Centre for Population Health (an NHS, University, and City Council partnership),
- introduction of a **pan Institute seminar series** (see section c.) **thematic workshops, and themed events**, as well strategic away-days for senior academic staff, and annual research days for students and staff,
- establishment of an **international scientific advisory board**.

Institute staff are being returned to UoA 2 and UoA 22 (social work and social policy). Groups are: **Public Health (PH)** comprising 9 academics; 6 clinical, 3 non-clinical, 3 clinical lecturers; 5 researchers, and 19 PhD students. This group focuses on non-communicable diseases, and has extensive international expertise in epidemiological methods and the use of routine NHS data. It hosts a large number of important registries and cohorts as outlined in section b. (theme 6). It runs an internationalised Masters in Public Health which in 2012-13 recruited 13 international students. Agreement with Sun Yat Sen University means 6 more Chinese students will register per year from 2014.

General Practice & Primary Care (GPPC) comprising 7 academics; 4 clinical, 3 non-clinical, 1 clinical lecturer; 9 researchers, and 11 PhD students. Its two major themes are underpinned by

Environment template (REF5)

international collaborations: a) multiple morbidity, complex care needs and deprivation, and b) organisation and implementation of care. It leads the Scottish School of Primary Care's flagship multimorbidity programme (£886k), and has an ever growing reputation in anticipatory approaches to health, and implementation and integration of complex service innovations evidenced by increasing European Union funding for this work. The Masters in Primary Care is registering 6 students from Sun Yat Sen University per year from 2014 (i.e.12 students/year to PH and GPPC).

Health Economics and Health Technology Assessment (HEHTA) comprising 6 academics, 6 researchers and 5 PhD students. This group has major strengths in economic evaluation alongside clinical trials; evidence synthesis; economics of population health; statistical analysis of linked datasets; decision analytic modelling; and incorporating public/patient perspectives and experiences. It introduced a new Masters in Health Technology Assessment in 2013.

Mental Health and Wellbeing (MHW) comprising 15 academics; 9 clinical, 6 non-clinical, 2 clinical lecturers; 37 researchers, 20 PhD students, and 72 Doctor of Clinical Psychology students. Its international reputation is for trials of new complex interventions for common and enduring mental health problems, and longitudinal studies to understand inequalities, and consequences of head injury, developmental disabilities, depression, suicide, and psychosis. It runs a Masters in Applied Neuropsychology and Clinical Neuropsychology, and established a Masters in Global Mental Health in 2012, aimed internationally and attracting 10 students in its first year and 14 in 2013.

MRC/CSO SPHSU comprising 19 core funded staff similar to University academics, 20 more junior core funded research staff, 10 grant funded researchers, and 20 PhD students. It achieved high ratings (5.5 out of 6, for both past and future) at its quinquennial review, 2009, and is internationally renowned for expertise in systematic reviews of non health care interventions, the use of data linkages, and a range of epidemiological and social science methods. It has 9 programmes focusing on health inequalities by socio-economic status, gender, age, and area of residence, the development and evaluation of policies and programmes to improve population health and reduce inequalities, and public and patient understandings and uses of public health research. We are pleased to have appointed **Moore** as the new **Director**.

Robertson Centre for Biostatistics (RCB) comprising ~50 staff, with 3 academics, 7 independent research statisticians, 3 junior statisticians, a strong group of 20 software developers and database managers and 1 PhD student. It is recognised internationally for its collaborative research across medicine, with significant strengths in cardiovascular and metabolic disease. It has substantial expertise in design, implementation, analysis and interpretation of clinical trials and epidemiological studies, and in novel informatics technologies to support their conduct. It is a key component of the NIHR Clinical Research Network fully registered Glasgow Clinical Trials Unit, is a support centre for the NIHR Stroke Research Network and hosts a Safe Haven providing research access to routinely collected health records. It supports trials and disease registries with CIs across the UK and internationally, and has strong collaborations with the pharmaceutical and device industries.

Social Scientists Working in Health & Wellbeing (SS) comprising 10 academics, 2 researchers, 22 PhD students. With backgrounds in sociology, anthropology, psychology, policy analysis, and history, this group has major strengths in studies of disability (hosting the Strathclyde Centre for Disability Studies), history of medicine (Centre for Medical History), improving access to services, interventions to support behavioural change, self-care and self-management, and the evaluation of complex community-based interventions. It established a new Masters in Global Health in 2012.

The creation of the Institute has, as intended, been a major catalyst to promote collaborative research across these groups, resulting in a number of large scale research programmes, e.g.:

- the "DALLAS" (Delivery of Assisted Living Lifestyles at Scale) evaluation examining the effect of the Technology Strategy Board's £37m roll out of assistive living lifestyles at scale across the UK. Led by **Mair** (GPPC) it involves **O'Donnell** (GPPC), **Briggs** (HEHTA), **Barry** (RCB), **Wyke** (SS), and additionally **Brewster** (Computing Science),
- the Government funded £1.9m programme on intellectual disabilities health trends. Led by **Cooper** (MHW), it involves **Williams** (MHW), **McCowan** (RCB), **Pell** (PH), and **Watson** (SS),
- the NIHR HTA funded £1.9m THRIVE RCT for mothers vulnerable in pregnancy and their babies at high risk of maltreatment. Led by **Henderson** (SPHSU), it involves **Minnis** (MHW), **Wight** (SPHSU), **McIntosh** (HEHTA), and **McConnachie** (RCB).

Environment template (REF5)

Our staff span a wide range of population health science disciplines, including: psychiatry, clinical psychology, health psychology, general practice, epidemiology, public health, statistics, economics, informatics, sociology, behavioural science, anthropology, geography, history, and urban studies, giving a superb environment for inter-disciplinary research.

b. Research Strategy

Our RAE 2008 UoA 2 submission noted our strengths in: using record linkages to exploit Scotland's high-quality data systems; evaluation of health care interventions, technology and delivery; social and physical environments affecting health risks; health service and community-based trials of health improvement interventions; use of existing and new longitudinal cohort studies; and inequalities in health by socio-economic position, gender, ethnicity, and age. Our strategic plans were to extend our programme of evaluations of social public health policies and interventions, with a strong emphasis on the economic appraisal of these, while continuing to capitalise on our clinical trials expertise, and on exploiting existing and new longitudinal and other epidemiological studies. We have succeeded in delivering this research agenda, have further developed our strategy in this REF period as outlined below, and integrated the highly successful MRC/CSO SPHSU into the Institute, greatly enhancing interdisciplinary and collaborative working.

In 2011, the Institute set out its **vision** as: 'excellent research contributing to better population health and wellbeing and fewer inequalities in health and wellbeing', and its **mission** as: 'to provide robust and timely evidence to inform policies and practices that will improve population health and wellbeing and reduce inequalities in these'. The Institute's **strategy** has been to focus on 6 cross-cutting themes fostering interdisciplinary research, rather than concentrating on specific topics or disciplines (www.gla.ac.uk/media/media_232676_en.pdf). It has therefore prioritised 6 key themes which build on our existing major strengths in social and population health sciences, and to which all Institute research groups contribute. Achievements against the 6 strategic themes include:

1. **Physical and social environmental influences on health:** We have taken a major role in a number of collaborations and consortia examining these relationships, e.g.:
 - leading a MRC Programme of Research on Neighbourhoods and Health examining ethnic and socio-economic status differences in health promoting or health damaging exposures (<http://www.sphsu.mrc.ac.uk/research-programmes/nh/>) (**Ellaway**) (Soc Sci Med 2008),
 - Wellcome Trust funded FAST study (Four hundred Area STudy) of environment and physical activity (**Ellaway, Macintyre**),
 - Europe and USA adolescents' exposure to smoking and drinking images in films (**Hunt; UoA 22, Sweeting**) (Thorax 2011; American Journal of Preventive Medicine 2013),
 - leading a MRC Programme on Sexual Health which has examined norms in relation to gay men (<http://gaymensurvey.sphsu.mrc.ac.uk/>) (**McDaid**),
 - co-directorship of the Centre for Research on Environment, Society and Health (<http://cresh.org.uk>) (**Mitchell**),
 - work in the UK and New Zealand on the extent to which environmental deprivation amplifies individual deprivation in relation to health outcomes (**Mitchell**) (Soc Sci Med 2011),
 - schools' influence on pupils' health and health-related behaviour (**Young, Sweeting, Henderson**) (Soc Sci Med 2010).
2. **Perceptions, experiences, and impact of health and wellbeing:** Examples include:
 - a major programme showing multimorbidity occurs 10-15 years earlier in deprived areas, with a large negative impact on quality of life, hospital admission rate, illness burden and treatment burden (**Mercer, Watt, Wyke; UoA 22**) (Lancet 2012),
 - a novel programme exploring "treatment burden" experienced by those with chronic illness and multimorbidity, with Southampton and Mayo Clinic, USA (**Mair**) (BMJ 2009; PLOS Med 2013).
3. **Inequalities in health:** This is a **major** strength evidenced by our analyses of the determinants of inequalities in health by socio-economic status, ethnicity, gender, residence and age, e.g.:
 - the Psychosocial and Biological Determinants of Ill health (pSoBid) study and West of Scotland Twenty-07 study which have unpacked interactions between biological and social influences on inequalities e.g. epigenetic and telomere differences and cortical morphology by socio economic status (**Cavanagh, Krishnadas, McConnachie, Ford; Director of the RCB, UoA 1**) (BMJ 2009),

Environment template (REF5)

- Midspan family survey studies contributing to better understanding of intergenerational influences on social inequalities in health (**Hart, Watt**) (Nature Genetics, forthcoming),
 - a programme examining emergence of ethnic health inequalities in adolescence, reporting e.g. blood pressure differences emerge between ages 12 and 16, and ethnic minority group teenagers have better mental health than white peers (<http://www.sphsu.mrc.ac.uk/research-programmes/eh/>) (**Harding**) (Hypertension 2010); and reporting disparities in revascularisation rates based on ethnicity (**Leyland**) (Circulation 2013),
 - a gender and health programme reporting that differences in physical health, disadvantaging girls, appear at puberty (<http://www.sphsu.mrc.ac.uk/research-programmes/gh/>) (**Sweeting**),
 - studies on place and socio-economic disadvantage relationships, including exploration of better ways of measuring and monitoring spatial effects on health (**Mitchell, Ellaway, Leyland**),
 - **Watt's** widely cited "Deep End" project with Scotland's 100 most deprived practices aims to set the policy making agenda for deprived areas. Supported by the Royal College of General Practitioners and the Scottish Government, it has received considerable media attention. It is a key action point for 2013-14 in the Government's 2020 Vision for Integrated Health and Social Care.
- 4. New technologies to enhance health and wellbeing:** Our innovative e-health initiatives, e.g.:
- trials of online interventions, including asthma and hypertension self-management (**Mair**), and NHS Direct phone support for Living Life to the Full (**Williams**),
 - development of an online CBT-based self-help programme for depression which is being rolled out across the world, and receives >2.5million e-hit/month, i.e. 31million hits/year (**Williams**),
 - development of web-based "Beating Bipolar" and "Bipol-App" psychoeducational interventions for everyday use (**Smith**).
- 5. The development and evaluation of policies and interventions:** This is a major, growing strength within the Institute, now championed by **Moore**, increasing our capacity to expand conduct of internationally recognised evaluations of large, community-based interventions or policies, e.g.:
- £22.5m DfEE funded evaluation of England's Sure Start, 2001-12 (**Leyland**) (Lancet 2008),
 - evaluations of the impact of the indoor smoking ban in Scotland (**Pell**) (NEJM 2008),
 - RESTORE: €2.9m European Union funded project, REsearch into implementation STRategies to support patients of different ORigins and language background in a variety of European primary care settings (www.fp7restore.eu) (**O'Donnell** UoA 22 and **Mair**),
 - GoWell: £3.2m Scottish Government/NHS Scotland/Greater Glasgow & Clyde/Glasgow Housing funded study on the effects of a major community regeneration programme (**Egan**),
 - GoEast: £490k Government funded study of impact of the Commonwealth Games 2014 (**Egan**),
 - £969k NIHR PHR funded evaluation of the introduction of minimum unit pricing of alcohol in Scotland (**Leyland**), and the alcohol strategy regarding multi-buy promotions (**Lewsey**),
 - SEED: £861k NIHR PHR funded Social and Emotional Education and Development interventions in primary schools (**Henderson, McConnachie, Wight**),
 - European Union funded Estimating Cost Effectiveness for Screening Strategies for Hepatitis B, C and HIV Infection in different populations in Europe (**Wu**),
 - EU-MASCARA: £863k FP7 funded study of cardiovascular disease/risk biomarkers (**Briggs**),
 - development of the Scottish Cardiovascular policy model (**Briggs, Watt, Ford**; UoA 1),
 - EuroHeart II: €1.2m European Union public health programme funded European Heart Health Strategy II (**Leyland**),
 - SOPIE: £703k + £574k MRC LLHW funded projects Supporting Older People Into Employment, and the impact of pensions on working lifetime and subsequent longevity (**Mackay, Leyland, Thomson, Pell, Hunt**; UoA 22).

We are also a major centre for innovative and influential large scale RCTs of complex interventions:

- POPPY: a trial of pelvic floor muscle training after prolapse surgery (**Barry**) (Lancet 2013),
- FFIT: £900k Football Fans In Training trial examining weight loss for men via Premier League football clubs (**Fenwick, Gray, Hunt**; UoA 22, **Wyke**; UoA 22) (Lancet 2012),

Environment template (REF5)

- EDIE-2: £1m MRC funded Early Detection and Intervention for people at risk of psychosis (**Gumley**) (BMJ 2012),
- supported self-management for patients with COPD (**Lloyd, McConnachie**) (BMJ 2012),
- HOOPS: a pharmacist based intervention in heart failure (**Mair, McConnachie, Greenlaw**) (European Heart Journal 2012),
- INMINDD: €2.9m European Union funded INnovative, Midlife INtervention for Dementia Deterrance programme (**McConnachie, O'Donnell**; UoA 22),
- BEAT-IT: £1.3m NIHR HTA funded RCT of behavioural activation for depression in adults with intellectual disabilities (**Melville, Cooper, Briggs, McConnachie**),
- FOCUS: £2m NIHR HTA trial of CBT for Clozapine unresponsive symptoms (**Gumley**),
- CoBaLT: £1.7m NIHR HTA funded CBT in primary care for treatment resistant depression (**J.Morrison, Williams**) (Lancet 2013).

We have also made significant contributions to many internationally important clinical RCTs funded from commercial and non commercial sources, such as:

- SCOT: £1.1m MRC funded Short Course Oncology Therapy trial (**Briggs**),
- European union FP7 funded RCT on treatment for cardiogenic shock (**Briggs**),
- BEAUTIFUL and SHIFT: ivabradine in Coronary Heart Disease with left ventricular dysfunction and heart failure respectively (**Ford**; UoA 1, **Robertson**) (European Heart Journal 2013),
- £452k MRC funded trial of macrolides in smokers with asthma (**Greenlaw, Mair**),
- PROPHECI: mesh reinforcement of permanent stomas versus standard care trial funded by Tissue Science Laboratories (**Lloyd, McConnachie**),
- Early lung cancer detection study recruiting 10,000 patients across Scotland (**Mair, Briggs**),
- £2.5m NIHR funded PDSAFE trial in Parkinson's disease (**McIntosh**),
- £1.03m NIHR HTA funded trial on cancer and venous access (**Shaw, Wu**),
- £1.8m NIHR HTA funded trial on treating fibroids with embolisation or myomectomy (**Wu**).

6. Using longitudinal studies, disease registries, trial, NHS and other administrative data:

We have continued and extended our exploitation of registries/longitudinal studies such as:

- SCOTS: NIHR funded registry on surgical intervention for obesity (**Briggs, Ford**; UoA 1),
- £7.2m government funded Scottish Health Survey, 2008-2011 (**Leyland, Macintyre**), and a further £3.8m for the period 2012-15 (**Gray, Leyland**),
- the British Household Panel Survey, the Midspan Family Study, the Millennium Birth Cohort, 1958 Birth Cohort, Aberdeen Children of the Nineteen Fifties study, the Determinants of Adolescent Social Wellbeing and Health (DASH) study, and the West of Scotland Twenty-07 study (**Cavanagh, Hart, Hunt**; UoA 22, **Macintyre, Watt, Wyke**; UoA 22),
- hosting the international CLARIFY registry of coronary heart disease that has recruited 33,000 patients for long term follow-up (**Ford**; UoA 1, **Greenlaw, Pell**),
- being the University of Glasgow Chief Investigators on the MRC Scottish Health Informatics Centre (**Ford**; UoA 1, **Pell**),
- using data linkage in UK, Australia, Scandinavia, to demonstrate socio-economic differences in mortality amenable to health care, and via an MRC award, using record linkage to handle non-response and improve alcohol consumption estimates in health survey data (**Leyland**),
- exploiting **large trial datasets** e.g. record linkage of data from the West of Scotland Coronary Prevention Study to demonstrate benefits of statins in lower risk individuals (**McConnachie, Robertson**) (European Heart Journal 2013),
- £1.9m US government funded study on psychological processes in suicide ideation/behaviour (**O'Connor**),
- research with a head injury cohort showing their premature deaths, and change in disability over time associated with perceptions of control, hence being a target for intervention (**McMillan**),
- using routine data in the Centre for Research on Environment, Society and Health (**Mitchell**),
- leading the West of Scotland Cancer Surveillance Unit (**D.Morrison**),
- further developing our programme on novel and complex record linkages as evidenced by leading roles in a range of studies e.g. the CLEAN collaboration, a consortium of researchers across Scotland evaluating the impact of Scotland's smoke free legislation (**Pell**),
- being Scotland's Principle Investigator for UK Biobank (**Pell**),

Environment template (REF5)

- research relating to the Scottish Coronary Revascularisation Register (**Pell**),
- routine data linkage studies through the **RCB Safe Haven** e.g. PsyCIS (NHS Greater Glasgow and Clyde clinical data on 8,000 patients with psychosis), first episode psychosis data, Primary Care Local Enhanced Service data, Scottish prescribing data and Scottish data on admissions/mortality (e.g. **Lewsey**, Circulation 2009).

The further strengthening of our 6 themes above was agreed in September 2011 and reviewed in May 2013 in consultation with our international scientific advisory board members, Sandro Galea from Columbia, NY; Mike Kelly from the National Institute for Health and Care Excellence (NICE); Graham Hart from UCL. It was agreed we would carry forward these same strategic research themes into the post REF period. In particular the Institute plans to continue its excellent descriptive and explanatory research, but will give increasing priority to the evaluation of what works to improve population health e.g. through development and testing of interventions, and trials or other evaluations of existing or novel interventions and natural experiments. Through close working with policy partners and third sector organisations we will pay particular attention to influencing and evaluating policy, as well as interventions. Consequently, we will target collaborative grant applications towards key funders such as NIHR and the new opportunities presented by Horizon 2020. In addition, we aim to exploit other internationalisation opportunities which are open to us, e.g. through our recently signed memorandum of understanding with Sun Yat Sen University and opportunities presented through the Universitas 21 initiative. Additionally, five new post-doctoral fellows funded by MRC and the University of Glasgow will specifically take forward health inequality focussed interventions with cross-Institute supervision and mentorship. We aim to appoint new senior staff in the spheres of Public Health, General Practice, Health Economics and Statistics. We also have strategies in place to grow and develop academics at all career stages; details are provided in the following section.

c. People, including:

I. Staffing strategy and staff development

Since RAE 2008 we have made strategic senior appointments to meet our research objectives:

- Professor of Health Psychology: Professor Rory **O'Connor**,
- Interdisciplinary Professor in Health and Wellbeing: Professor Sally **Wyke**,
- Director of MRC/CSO SPHSU: Professor Laurence **Moore**,
- Professor of Child and Adolescent Psychiatry: Professor Chris **Gillberg** (0.2 WTE; joint appointment with Gothenburg University)
- Professor of Primary Care Research: Professor Stewart **Mercer**,
- Reader in Mental Health: Dr Daniel **Smith**,
- Reader in Health Informatics: Dr Colin **McCowan**,
- Senior Lecturer Public Health: Dr Daniel **Mackay**.

The transfer of the MRC/CSO SPHSU into the University has added an additional 19 senior staff including 9 programme leaders, 20 more junior core-funded research staff, and 20 PhD students. In total, we currently have registered 98 PhD students and 72 DClinPsy students. Since RAE 2008 we have been awarded 69 new fellowships, particularly noteworthy as we lack access to NIHR fellowships because of our Scottish location. Six further non-clinical post-doctoral fellowships are currently at advert (4 MRC/University, 1 Sackler and 1 MRC funded). Details of the fellowships are:

- 47 non-clinical PhD fellowships funded by MRC, ESRC, CSO, Stroke Association, University of Glasgow Lord Kelvin-Adam Smith, NHS, Sackler Foundation, and overseas governments (**Agbakoba, Al-Aradi, Aldekhail, Algindan, Almaskari, Al-Salman, Al-Suhaim, Anderson, Baba, Baylan, Breannan, Craig, Cruz, Daniels, Deakin, Doku, Geue, Green, Hammed, Harris, Hay, Isaacs, Jabareen, Jamieson, Leelahavarong, Lu, McGarty, Mensah, Miller, Muir, Nixon, Ntuk, Palmateer, Perez, Singweratham, Skivington, Smillie, Smith, Srisawat, Starkie, Stewart, Sumransub, Taylor, Wainman-Lefley, Walsh, Williams, Zheng**),
- 6 non-clinical postdoctoral fellowships funded by MRC, CSO, Parkinson's Disease Society, and Sackler Foundation (**Bouamrane, Cullen, Gardani, Geue, Govan, Macintosh**),
- 13 clinical fellowships funded by MRC, CSO, NHS Education Scotland, University endowment, Mason Foundation, the Centre for integrative Care, and overseas governments (**Baker, Blane, Gallacher, Gray, Jani, Langan, Martin, Matthews, D.Morrison, Simpson, Queirazza, Ul-Haq, Warrilow**),

Environment template (REF5)

- 1 University supported leadership fellowship (**Robb**),
- 2 awards within the SS research group, related to our UoA 22 return (**Shah, Gray**).

Staff and their development is central to the Institute's research strategy. We place great emphasis on growing the next generation of researchers and career development is core business for our Institute as evidenced by:

1. Career development and mentoring

Briggs, a member of the Institute senior management group, is our "Early Career Researcher (ECR) Champion", and an active ECR Forum is encouraged to feedback to the Senior Management Group. Our doctoral students also have their own group, which organises an annual research student conference. We believe our proactive mentoring, training workshops and mock interviews for research staff applying for internal or external Fellowships has contributed to recent successes (**n=69**). We have an internal peer review system for grants, which provides a useful learning experience for both internal reviewers and grant applicants, and have an ECR Grant Writing Group, which has received excellent feedback and importantly, resulted in success. Between 2008 and 2013, the Institute's ECRs were PI or Co-I on **27 awards worth £4.1m**.

2. Networking and learning opportunities

We have explicitly developed a wide range of networking and learning opportunities for all staff and students, including since 2011:

- a series of 8 workshops (on topics as varied as drugs, alcohol and addictions, complex interventions, environment and health, arts in health research, realist synthesis, the presentation and representation of health, mobile apps for health, knowledge exchange and public engagement),
- use of Maurice Bloch endowment fund to establish an Institute wide monthly seminar series,
- seminars and research skills workshops in each of the constituent research groups,
- the annual research away-days for academic staff and for students,
- the student away-day,
- an annual get-together for all administration staff,
- the annual strategic away-day for the Institute's senior management group,
- monthly meetings of the Institute's Senior Management Group,
- establishment of the knowledge exchange and public engagement group (Chair: **Wyke**).

3. Athena SWAN Bronze Award

The University holds an Athena SWAN Bronze award. Whilst Athena SWAN is focused on the STEMM disciplines, the University believes that this achievement will have a positive impact across the whole institution, on both female and male careers and across disciplines. The Institute is currently aiming for silver accreditation by 2015. The Institute Director and two Deputy Directors are all women (**Macintyre, Cooper, Wyke**; UoA 22) as is its postgraduate convener (**O'Donnell**; UoA 22), research convenor (**Mair**) and four out of the seven research groups heads. Athena SWAN is a standing agenda item at our monthly Senior Management Group meetings, and a Deputy Director (**Cooper**) chairs the Athena Swan subgroup, which is attended by the Director and has representation across the range of grades, clinical and non-clinical, and gender. We support family friendly working hours and avoid early morning and late evening meeting times.

4. Equality & Diversity Training

The Institute has strongly promoted use of the University's high quality resources (two online equality and diversity training courses for all staff), treating it as mandatory, which is made clear to new starts at induction, as well as being embedded in our annual Performance and Development Review assessments. We have also held "in house" training sessions to allow all staff to attend in an informal atmosphere, to enhance learning for those who prefer this style.

c. II. Research students

Combining our research groups into one Institute has benefited our postgraduate students as they have access to a wider breadth of academic disciplines and subject areas. Doctoral training is high priority, and the Institute has a current headcount of 170 doctoral students. We offer students a broad programme of skills training, and personal and professional support with a combination of compulsory and optional training sessions intended to enhance skills and employability and equip fellows to become leaders in their chosen field. Courses range from research focused on topics

Environment template (REF5)

such as writing your thesis, preparing for the viva and developing research independence, to those related to enterprise and public engagement including project management, leadership and entrepreneurship for researchers. As we are a cross-College Institute, students also have the advantage of access to training courses offered by both Colleges. We closely monitor student progress with students having to develop a personal development plan in consultation with their supervisory and assessment teams. This is reviewed annually, along with other documentation of progress against agreed milestones by a panel composed of a convenor and two assessors, at least one of whom is an independent academic not directly involved in the supervision of the student. As part of this process, students undertake a self-assessment as well as supervisors completing progress reports.

d. Income, infrastructure and facilities**1. Income**

There has been major University restructuring during this REF period, with the inception of the Institute. Additionally, we are returning staff to both UoA 2 and UoA 22. These organisational changes make direct comparisons between RAE 2008 and REF 2014 problematic, but clearly there has been substantial growth. For this REF period, our external grant expenditure was in excess of **£36m**, of which **£20.2m** was Research Council funding. We strategically target the Research Councils, NIHR, Scottish Government, and increasingly the European Union as our main funding sources. This strategy has proven successful as we have experienced a **1,517%** increase in Research Council awards announced comparing 2008-09 and 2012-13. The transfer into the University of the MRC/CSO SPHSU accounts for much of this, but even without this, our Research Council funding has increased **73%**. In addition, we have experienced the substantial growth in funding awards announced by the European Union of **454%** between 2008-09 and 2012-13. We have also gained some large awards from the Scottish Government such as **£1.9m (Cooper)** for a project investigating the health inequalities trends experienced by adults with learning disabilities. Research income per FTE has also grown by **13%** from 2008-09 to 2012-13. Our support of Early Career Researchers is also reaping dividends given their **27 awards** worth a total value of **£4,120,490** during 2008-13. All this data **excludes** awards to the SS group returned to UoA 22.

2. Infrastructure and Facilities

Our vibrant research environment is evidenced by the large and growing number of research and taught students we attract to our Institute each year, the positive disposition of major research programme, project and fellowship funders to grant awards, and the number of new senior academics we have successfully attracted and appointed over this period. In short, we continually grow. Our staff and students are fully equipped with the resources they need for their research, and are integrated within our multi-disciplinary research teams, with access to administrative support and other required support services e.g. IT. Most student office accommodation is together with other students, to encourage sharing of ideas and experiences. The recently funded Scottish Health Informatics Research Centre includes a training workstream (coordinator **McCowan**), which is a major advantage for our students, providing a number of highly relevant training opportunities including information governance, handling large datasets, record linkage and Safe Havens. Knowledge exchange is an important focus of the Institute and is embedded throughout students' training, so they learn how to design pathways to impact, engage with beneficiaries of research, and maximise the reach and impact of their research. The University offers courses on public engagement and the Institute provides a wide range of networking and research skills workshops for staff and students, seminar programmes such as the monthly Maurice Bloch programme, and in-house "research in progress" seminar series for fellows and early career academics.

Some of our grant funding has specifically provided resources for students, and for infrastructure funding. For example, **Cooper**, with colleagues at the Universities of Edinburgh, Dundee, and Aberdeen was awarded the prestigious £2.2m PsySTAR programme. This competitive MRC award funds an open cohort of clinical fellowships for the UK's most able psychiatrists, so they can undertake PhDs under the supervision of Scotland's most successful basic and clinical scientists. The first four fellows started in Autumn 2013, with two based at the University of Glasgow. The Institute hosts the £1.5m Sackler Institute of Psychobiological Research, led by **Cavanagh**, which has invested in fellowships and allowed us to upgrade existing neuroimaging equipment and provide state of the art cognitive neuroscience facilities. The MRC/CSO SPHSU has its own in-

Environment template (REF5)

house professional survey team skilled at collecting social and health data from community studies.

In partnership with NHS Greater Glasgow and Clyde, the RCB has developed a Safe Haven to support secondary research uses of clinical data. It provides a physical location and IT infrastructure to underpin data linkage and confidential use of healthcare data for research and service purposes, and holds a core database of SMR, GRO, primary care and e-prescribing linked datasets. It permits researchers to access linked datasets via dumb terminals in the RCB to enable the use of unconsented, anonymised linked datasets for research purposes, which has not previously been available. It also facilitates pharmacoepidemiology and outcomes research and helps promote development of a cadre of researchers with expertise in electronic healthcare data and the technologies required to extract and analyse this data securely.

Also in partnership with NHS Greater Glasgow and Clyde, we have access to state of the art clinical research facilities with dedicated staff, adding considerable value to our grant awards. We also have a purpose built Suicide Behaviour Research laboratory.

Additionally, the acquisition by the University of the 14 acre Western Infirmary site immediately adjacent to its main Campus creates a huge opportunity for infrastructure development over the next 15 years. The University Court has approved a vision for a campus that will provide a research environment which is state-of-the-art. The University will be investing £750m on new-design buildings and major refurbishment of existing buildings, and members of our Institute expect to be relocated together at the Western Infirmary site before the next REF, which will contribute to increasing productivity and our overall effectiveness and help us achieve our academic ambitions.

e. Collaboration and contribution to the discipline or research base

Members of the Institute contribute widely to the development of our core disciplines and research base as evidenced by:

Collaborations

We have a well established track record of collaboration with external bodies ranging from industry, to the charity/voluntary sector, government agencies, and the NHS. The impact of such collaborations has been outlined in our impact template; key examples include:

- MRC/CSO SPHSU was a founder member of the MRC's Population Health Sciences Research Network, and has contributed via that network to MRC's new guidelines on the evaluation of complex interventions, and of natural experiments,
- working with an Irish Charity (AWARE) and TESCO to provide support for Living Life to the Full classes in the Republic of Ireland, to overcome depression,
- co-funding of a CSO Postdoctoral fellowship by a company called CIS Informatics in order to promote exploration of preoperative assessment processes across Scotland to inform development of new health informatics tools,
- we are one of three partners of the Glasgow Centre for Population Health, together with NHS Greater Glasgow and Clyde and the City Council; a prime example of collaborative working,
- members of our group sit on the Scottish Government's Ministerial Working Parties on Tobacco Control and Healthy Ageing, and have given evidence to Scottish Ministerial Task Force on inequalities in health, and to the Sport and Health Committee,
- members of our Institute work collaboratively with Government using their expertise and new and emerging evidence from their research programmes to influence policy development, e.g. **Cooper, Mercer, Watt, O'Connor,**
- Our leading role in GRAMNET (Glasgow Refugee, Asylum and Migration Network), researching across Scotland, UK and internationally to build on our extensive expertise relating to migration, refugees and asylum, with a particular interest in community cohesion,
- Our extensive CPD provisions for our core disciplines, and work with the Royal Colleges, e.g. GPPC and MHW groups run frequent evening CPD events, HEHTA and MRC/CSO SPHSU provide national and international CPD courses in evidence synthesis, economic evaluations, decision analytical modelling and multilevel modelling. The wide range of our Masters courses provide CPD for practitioners, professionals and researchers nationally and internationally.

International collaborations are promoted by the Institute and University via "internationalisation" events to promote networking, European Union funding seminars/workshops, regular "industry" day events, and support for cross-Institute workshops. We have developed a number of strategic

Environment template (REF5)

international collaborations with the aim of growing international programmes of research and further increasing our international profile and these have already produced tangible results. Examples include our previously cited European Union funded research, recent signing of a memorandum of understanding with Sun Yat Sen University (see section a.) and:

- **Gillberg's** appointment at both the University of Glasgow and Gothenburg, and **Minnis'** Associate Chair at Gothenburg lead to establishing a wider group including Universities of Bergen, Norway, Kochi, Japan, and the Institute Pasteur, France. They are driving forward international epidemiological studies in child mental health, and have been productive, with 12 joint publications since 2008,
- **Gumley's** Visiting Professorship at the Department of Psychology, University of Copenhagen, which has resulted in a joint grant of £500k from the Danish Humanities Council to establish a Danish- Scottish high risk birth cohort,
- **Leyland's** collaborations with the Universities of Western Sydney, Helsinki, Oslo and the Netherlands Centre for Health Services Research have been instrumental in gaining three separate grants worth AU\$390k and £190k to study preventable hospitalisations, and another award of AU\$470k to study contributions to indigenous health outcomes,
- collaboration with colleagues at the University of Melbourne (**Mair, Mercer, Watt, Wyke**) which has resulted in joint publications (BJGP 2012) and a grant award of £100k from the Scottish School of Primary Care for the Scottish Multiple And Long Term conditions study (MALT), and is promoting joint working in the spheres of multimorbidity,
- collaboration with members of the Knowledge and Evaluation Research Unit at the Mayo Clinic, USA (**Mair**) to explore the issue of "treatment burden" which led to **Mair** being invited to give "Grand Rounds" at the Mayo Clinic (the first British GP to do so) and has resulted in 5 joint publications (further 1 under review), and underpinned two grant awards totalling almost £300k,
- **Mercer's** Adjunct Professorship at the School of Public Health, Chinese University of Hong Kong which has led to 20 joint publications and study visits of their fellows to our Institute,
- **Moore's** Honorary Professorship at the School of Population and Global Health, University of Melbourne has led to 3 recent impactful papers on evidence-informed decision making in local government, and food choices in schools. He is also adjunct Professor at Bergen, and Chief Investigator of the European funded TEENAGE project, generating 3 publications so far,
- collaboration with the Florey Institute in Melbourne (**Wu**), which has resulted in funding awards from NH MRC Australia, CHSS, CHS Northern Ireland, Stroke Association and NIHR to undertake a RCT of a complex intervention (very early mobilisation in stroke).

Leading and driving influential Research Council and Government advisory bodies

- **Briggs** is co-chair of the Joint Society for Medical Decision Making and International Society for Pharmaco-economics and Outcomes Research Task Force on Modelling Methods. He is a member of the programme development group for the NICE guideline Prevention of Cardiovascular Disease at the Population Level; and member of the Consolidated Health Economic Evaluation Reporting Standards working group.
- **Cooper** was a member of MRC's strategic review of mental health research funding, on behalf of the Office for Strategic Co-ordination of Health Research (OSCHR) 2009-10, and is a member of the Scottish Government's intellectual disabilities policy implementation group and Chairs its health improvement group.
- **Hunt** is a member of the MRC Population Health Sciences group.
- **Leyland** is on the Governing Council of the European Public Health Association and committee member of the Society for Social Medicine.
- **Macintyre** is a member of MRC Council and in that capacity also contributes to MRC Strategy Board; since 2008 she has chaired a number of scientific advisory committees for research groups e.g. NIHR School for Public Health Research, and contributed as a member to a number of bodies e.g. NICE Implementation Strategy, Foresight Advisory Panel.
- **McMillan** is President of the International Brain Injury Association, and the USA government Vet Affairs International Advisory group on traumatic brain injury and related stress disorders.
- **Moore** was a member of the Public Health Board of OSCHR, 2008-10, and is a member of the MRC National Prevention Research Initiative Scientific Committee.
- **O'Connor** is President-Elect of the International Academy of Suicide Research, and the UK National representative on the International Academy of Suicide Research.

Environment template (REF5)

- **Pell** convenes the Royal Society of Edinburgh's Clinical Sciences panel. She chairs the MRC's Population Health Sciences group, and in that capacity is an MRC Strategy Board member. She is also Deputy Director of the new Scottish Health Informatics Research Centre.
- **Watt** chairs the Programme Advisory Panel of the UK Charity, Medical Aid for Palestinians, and was a member of Council for the Academy of Medical Sciences, 2005-08.
- **Wu** is a member of the NICE Technology Appraisal Committee, and health economic advisor to SIGN (the Scottish Intercollegiate Guidelines Network).

Research grant and fellowship awarding bodies

- **Cooper, O'Donnell** are members of the CSO doctoral and post-doctoral fellowship committees, Scottish Government.
- **Cooper** is Academic Trustee of the Baily Thomas Charitable Fund (awarding ~£6m annually of competitive grants in the intellectual disabilities field).
- **Ellaway** is a member of ESRC/NIH grant funding committee, and the ESRC interdisciplinary early career fellowships competition funding committee.
- **Hunt, Moore, Leyland** are NIHR Public Health Research Programme Funding Board members.
- **Wu, Cooper, J.Morrison, O'Connor** are members of the CSO Health Services and Population Health Research Panel, Scottish Government.

Journal Editorships: Institute members provide major editorial leadership roles, for example:

- **Briggs** is Editor of Health Economics, and Co-Editor of Medical Decision Making.
- **Cooper** is mental health Editor of the Journal of Intellectual Disabilities Research.
- **Gillberg** was Founding Editor in Chief of European Child and Adolescent Psychiatry.
- **Gumley** is Editor of Psychology and Psychotherapy: Theory Research and Practice.
- **Harding** is Editor of Ethnicity and Health.
- **Leyland** is an Editor of the European Journal of Public Health.
- **McDaid** is an Associate Editor of BMC Public Health, and joint Editor of Sexual Health.
- **McIntosh** is Associate Editor of the Patient Journal.
- **McMillan** is Associate Editor of Neuropsychological Rehabilitation.
- **Mercer** is a Co-Editor-in-Chief of the Journal of Comorbidity.
- **O'Connor** is Associate Editor of Archives of Suicide Research.
- **Pell** is Associate Editor for Heart.
- **Smith** is Associate Editor of BMC Psychiatry.
- Additionally we contribute as members of the editorial boards of 23 other international journals.

Honours and esteemed awards

- **Gillberg** was awarded the King's Medal of the Seraphim Order, 2009 (the Swedish equivalent to Knights Bachelor) for services to child and adolescent psychiatric research. He received the Söderberg Prize for Medicine, 2012 ("Little Nobel Prize"), the Dahlberg award for research, and the Life Watch Award for autism research in 2010.
- **Macintyre** was awarded a DBE in 2011 for services to science, and honorary degrees from UCL and Lancaster University in 2013 for services to population health sciences.
- **Mercer, Watt, Wyke**; UoA 22, received the Royal College of General Practitioners best primary care Paper of the Year Award, 2013 for their Lancet paper on epidemiology of multimorbidity.
- **J.Morrison** was awarded the President's Medal of the Academy of Medical Educators for 2010.
- **Pell** was elected to the Fellowship of the Royal Society of Edinburgh in 2010. Her NEJM (2008) paper was voted by the American Heart and Stroke Associations to be the most important research advance of 2008.
- **Williams** is one of only 16 academics ever to have been awarded Honorary Fellowship of the British Association for Behavioural and Cognitive Psychotherapies. He also won the Popular Medicine Category, BMA Medical Book award in 2013.

To conclude, our newly configured research Institute has been enormously successful since its inception, undertaking agenda setting and world leading research that has influenced practice and policy locally, nationally and internationally. To ensure our future continuing growth and impact we have put in place mechanisms to ensure continued success through a focus on staff development, interdisciplinarity, collaboration, programmatic research, and internationalisation.