Institution: Newcastle University

Unit of Assessment: UoA 2

a. Overview

The vision of the researchers returned in UoA2 is to transform the health of individuals and populations through multi- and inter-disciplinary research in health and social science which engages directly with patients, practitioners, policy-makers and the wider public. Our work addresses key public health challenges such as age-related ill health, disability, obesity, smoking and alcohol use, as well as health inequalities. The UoA2 return is largely co-terminus with the **Institute of Health and Society** (IHS) but also includes four staff members hosted by other Research Institutes (**Stansby, Jagger, Rodgers, Parr**) whilst two IHS staff members are returned in UoA3 (Adamson, McKay) and one in UoA28 (Pennington). The majority of returned investigators are housed within the custom-built Baddiley-Clark Building which opened in 2010, representing a significant investment of £26M by Newcastle University in inter-disciplinary health and social science research. The building was designed to facilitate interactive working, and the benefits of this optimal environment for research innovation can be seen in this return. The building is linked to prestigious Newcastle University biomedical sciences facilities providing a unique opportunity to interface health and society with basic and clinical science. Also in 2010, a new IHS director (**Kaner**) was appointed who has driven the development of our research strategy. During the REF assessment period, we have recruited strategically to provide leadership in key areas including health economics (**Vale**) and health psychology (**Sniehotta**) and remodelled our staff structure to build academic capacity and to ensure sustainability with the appointment of 11 new lecturers. **White** and Adamson are, uniquely, members of all three UK public health initiatives (**Fuse**, **the Centre for Translational Research in Public Health, a UKCRC Public Health Research Centre of Excellence, the National Institute of Health Research (NIHR) School for Public Health Research** and the **Department of Health's (DH) Public Health Consortium**). We have won prestigious external Fellowships at all levels including: two **NIHR Senior Investigator Awards** (**Bond, Eccles**), an **NIHR Professor in Translational Research** (**Robinson**, with a further award to Adamson), eight post-doctoral and 27 doctoral Fellowships/PhD studentships. Despite a challenging economic climate over the REF assessment period, our annual income has risen from £4.8M in 2008-09 to £7.4M in 2012-13. In 2011, we achieved a **Silver Athena Scientific Women's Academic Network (SWAN)** award, the first such award within Newcastle University, recognising our longstanding, positive work practices in promoting women's careers in science and our commitment to equal opportunity to enable all individuals to reach their full potential.

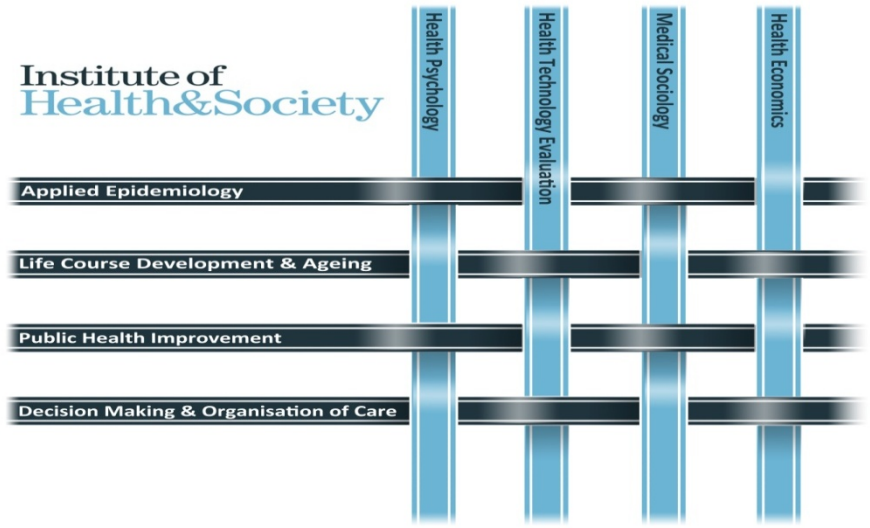
b. Research strategy

A review of our research strategy in 2009, involving analysis of our research strengths and external expert feedback, suggested the need for greater focus. Acting on this, we have concentrated our research into four **research themes** and four ***methodological groups*** (see below). Our research strategy was launched in 2010 and it provides both focus and balance across IHS and allows those in other Institutes with similar research interests to be included. Importantly, it has stimulated new working relationships as exemplified by showcase awards such as: *Transition* (**Colver**), a £2M **NIHR Programme Grant for Applied Research (PGfAR)**, a collaboration between life-course clinicians and researchers, health economists and social scientists; and *Fuse* (**White, Adams,** Adamson, **Kaner, Sniehotta**), a £10.5M **UKCRC** award with public health, health psychology and health economists as co-applicants.

IHS research is structured (Figure 1) into four key **themes** each with clear leadership: Applied Epidemiology (**Rankin**), Life-course Development and Ageing (**Robinson**), Public Health Improvement (Adamson) and Decision Making and Organisation of Care (**Thomson**). Cross-cutting these themes are four methodological ***groups***: *Health Economics* (**Vale**), *Health Psychology* (**Sniehotta**), *Health Technology Evaluation* (**McColl**), and *Medical Sociology* (**Exley**). The methodological groups support our multi-disciplinary research carried out within the themes, by developing methodologies appropriate for the scientific challenges we are addressing. We also have three platforms which support the design, delivery and conduct of research; the **NIHR** Research Design Service (RDS) in the North East (**Vale**), the Newcastle Clinical Trials Unit (**McColl**) and Fuse (**White**). Fuse is also a founding member of the **NIHR** School for Public Health

Research. UoA2 academics have strong collaborative links as evidenced by the significant number of outputs co-authored with staff from other UoAs.

Figure 1. Research Structure



Our research aims are to: achieve research excellence across the UoA; build research infrastructure via collaboration and our infrastructure platforms; secure sustainable capacity by nurturing early career researchers (ECRs) and academic leaders of the future; work closely with the end-users of our research to ensure that our science is relevant to policy and practice and to patients and the public who are active collaborators in our research, from grant application to dissemination and implementation. To support patient and public involvement and engagement, **Thomson** was appointed as Faculty Associate Dean for Public and Patient Engagement (PPE).

Specific research achievements:

Applied Epidemiology: This theme undertakes research on the causes and patterns of disease in areas of major public health concern including; maternal and child health, obesity, diabetes, cancer and ageing. Through external funding, we have established and maintain a number of nationally important cohorts including: the Newcastle Thousand Families Study (**Pearce**); Gateshead Millennium (Adamson); Database of Children with Autism Spectrum Disorder Living in the North East (DASL^{n}e) (**McConachie, Parr**), and population-based registers: Regional Maternity Survey Office maternal and child health registers (**Bell, Rankin**) and the North of England's Young Person's Malignant Disease Register (**McNally**). Using these we have published internationally recognised research on obesity (*International Journal of Obesity*), diabetes (*Diabetes Care, Diabetologia*), cancer (*Blood, Gut, Lancet)*, and maternal/fetal and child health (*American Journal of Epidemiology*, *Annals of Neurology*, *Diabetologia*, *Human Reproduction*, *International Journal of Epidemiology, Lancet, Pediatrics*). **Rankin**'s (**NIHR Career Scientist award**, **Healthcare Quality Improvement Partnership** (**HQIP**), **Newlife Foundation**) work on obesity in pregnancy (*JAMA, Obesity Reviews*), received significant international and national media attention, with a commentary in *Nature Reviews: Endocrinology* and is informing national policy. **Pearce**'s (**Cancer Research UK**, **DH**, **European Union** (**EU FP7 EURATOM**), **US National Institutes of Health**) research on the use of computed tomography (CT) scans and subsequent childhood cancer risk has highlighted that doses should be kept as low as possible and that alternative procedures, not involving ionising radiation, should be considered (*Lancet*). **Stansby** (*Cochrane Database of Systematic Reviews, Health Technology Assessment Reports, JAMA*) leads new technology test accuracy reviews into vascular disease (**NIHR Cochrane programme grant**) and individual patient

data meta-analysis for diabetic foot ulceration. **Jagger** (**AXA** Research Chair) leads research into living a healthy life for longer and the societal impacts of increasing life expectancy (*Lancet, Lancet Neurology, BMJ*). Her research (**Economic and Social Research Council** (**ESRC**)**, Medical Research Council** (**MRC**)) uniquely lies at the interface of epidemiology, demography and biology of ageing. **Stephan**'s (ECR) research on mild cognitive impairment (*PLOS Medicine*) is being used by the Cohort Studies of Memory in an International Consortium (COSMIC) to improve prediction for dementia in population-based settings. **Jagger** and **Stephan**'s work is helping to understand how people can age more healthily.

Life-course, Development and Ageing: The research focus in this theme is on understanding development, ageing and health across the life-course, from childhood into old age, and improving individual health outcomes, quality of life and quality of care. This theme has secured four **NIHR PGfARs** grants; overall leadership of two is provided by theme members (**Colver, Robinson**). **Colver**'s research on quality of life in children with cerebral palsy (**Wellcome Trust, ESRC**) is recognised as a defining international longitudinal study within the child disability field (*Archives of Disease in Childhood, BMJ, Pediatrics*). As with other areas of excellence in UoA2, success in autism research (*Cochrane Database of Systematic Reviews, Developmental Medicine & Child Neurology, Journal of Medical Genetics, Journal of Autism & Developmental Disorders, Lancet*) is founded on important registers developed locally which form part of key international collaborative networks. The Autism Spectrum Disorders-UK (ASD-UK) and Dasl^{n}e registers (**McConachie, Parr**) now include 2500 families and are internationally known as outstanding models of research engagement with families. **McConachie, LeCouteur, Rodgers** and **Parr** are leading research (**NIHR Research for Patient Benefit (RfPB); NIHR Health Technology Assessment (HTA), MRC**) which is enabling the development and evaluation of a range of interventions for children with neurodevelopmental disorders and their parents. Researching and listening to the voice of people with cognitive impairment and dementia (**Bond, Robinson, Jagger**) has informed UK dementia care services and the National Dementia Strategy for England (*Journal of the American Geriatrics Society, PLOS Medicine*). **Robinson**'s (**NIHR Professorship in Translational Research, NIHR PGfAR**) dementia work has led to her appointment as the Royal College of General Practitioners' 'National Clinical Champion for Dementia'. Data from the **MRC** funded 85+ study (**Bond, Jagger, Robinson**), have revealed important aspects of healthy ageing and age-related disease in the oldest old (*Lancet*, *BMJ*). The **MRC** Cognitive Function and Ageing Study (CFAS) (**Bond, Robinson, Stephan**) second cohort follow-up has shown that preventative care is leading to a lower number of people with dementia than predicted 10-20 years ago (*Lancet*). **Brittain** is leading research on assistive technologies in promoting independence across the life-course (**EPSRC, Technology Strategy Board** (**TSB**) (*International Psychogeriatrics)*.

Public Health Improvement: Addressing major public health challenges through studying lifestyle behaviour and health inequality, research within this theme concentrates on the development, evaluation and translation of health interventions to actively promote well-being. **White** and **Adams** lead theoretical, methodological and empirical work on intervention-generated inequalities. Recent work has analysed care pathways for lung cancer (*PLOS Medicine*), identifying intervention-generated inequalities in surgery and chemo-therapy within universal and non-universal healthcare systems. **Adams'** work (*BMJ, Obesity Reviews*) on food advertising (**MRC**) has been discussed with OfCom and cited in a number of documents on strategies for chronic disease control e.g. Association of Medical Royal Colleges. Other related work includes evaluation of the school food policy (Adamson, **White**), contributing evidence to the School Food Plan and universal school meals (**DH**). **Anderson** (*Lancet, Addiction*) leads the multi-disciplinary (**EU FP7**) Addictions and Lifestyles in Contemporary Europe-Reframing Addictions Project (ALICE RAP), with 100 scientists from 25 scientific disciplines, aiming to inform better European and global governance of addictions. **Anderson,** with **Kaner** and **Newbury-Birch,** leads the Optimizing Delivery of Health Interventions (ODHIN) five European country project (**EU FP7)**, a translational project testing better implementation of screening and brief advice for hazardous and harmful alcohol use in primary health care settings. Alcohol research (*Drug & Alcohol Review, BMJ, HTA report*) (**Kaner** and **Newbury-Birch**) has evaluated brief intervention approaches in a range of settings: primary care, accident and emergency departments and criminal justice, as well as with key groups: the elderly (**NIHR HTA**), pregnant women (**NIHR RfPB** with **Rankin**) and schoolchildren (**NIHR Public Health**

Research), and have informed a £50m national Directly Enhanced Service. **Adams (NIHR Career Development Fellowship)**, **Sniehotta** and **Ternent** have secured funding to pursue a programme of work on the effectiveness and acceptability of personal financial incentives for health behaviour change (**NIHR HTA**). As part of the UK Pregnancies: Better Eating and Activity Trial (UPBEAT; **NIHR PGfAR**), a complex intervention in obese pregnant women, **Bell** leads physical activity in pregnancy research that is providing critical evidence for the effects of health behaviour change in pregnancy. Research with midwives (**Bell, White, Araujo-Soares**) to identify potential solutions to high smoking rates in pregnancy has led to a redesign of NHS referral pathways, which is being evaluated in a natural experimental step-wedge trial (**NIHR School for Public Health Research**).

Decision Making and Organisation of Care: Research in this theme brings together social and behavioural science (**Exley, Finch, Rapley, Presseau, Ternent**) and clinical expertise (**Eccles**, **Thomson**) to advance applied research on decision making, implementation and health care organisation. **Thomson** (*Cochrane Database of Systematic Reviews, BMC Medicine*) leads a major research programme on the development, evaluation and implementation of shared decision-making in a range of clinical settings. This includes the Making Good Decisions in Collaboration (MAGIC) programme (**Health Foundation**) which has had considerable success in increasing the uptake of shared decision making tools, skills and techniques. It has also involved research into understanding shared decision making in context, and developing and evaluating interventions to support shared decision making, including two **NIHR PGfAR** and two **NIHR Health Service and Delivery Research** (**HS&DR**) project grants. **Finch** (*Bulletin of the WHO, Sociology, Social Science & Medicine*) and May (now Southampton) led the development of the Normalisation Process Theory (**ESRC**) which has been highly influential amongst researchers and non-academic users (clinicians, policy-makers) who are interested in the implementation of new interventions in healthcare. There are at least 33 published peer-reviewed papers that have applied the theory and approximately 400 publications have cited at least one of five key theory papers. **Presseau** (ECR) is leading research (**Diabetes UK**) aimed at improving diabetes management in primary care.

The cross-cutting *Health Economics* group (**Vale, Brown, Deverill, Ternent**) has three strands of research in the development and application of methods in: (1) economic evaluation (*BMJ, Health Technology Assessment, Lancet, Stroke*) and health technology; (2) elicitation of preferences from patients and the public (*Health Economics*, *Health Technology Assessment, Medical Decision Making)* and (3) econometric techniques into health behaviours and inequalities (*Health Economics, Social Science & Medicine, Addiction*). Each contributes to national and international policy in oncology, haematology, public health and urology and funded by grants from: **ESRC, MRC, HTA, PGfAR, HSDR, i4i, PHR, RfPB, Health Foundation, NIHR Research Methods**).

The cross-cutting *Health Psychology* group (**Sniehotta, Adams, Araujo-Soares, Presseau**) focuses on behavioural and psychological processes in health and health care (*Diabetes Care, Health Psychology, Pain, Psychology & Health*) including work on methodology, theory and the development and evaluation of behaviour change interventions contributing to scientific and practice agendas. For example, the first UK-based full randomised control trial of a weight loss maintenance intervention for obese adults after initial weight loss (**Sniehotta; MRC**) and work on very low calorie diets (**Sniehotta**, Adamson; **Diabetes UK**).

The cross-cutting *Health Technology Evaluation* group (**McColl, Deverill, Dickinson, Howel, Muirhead, Stocken, Steen, Vale**) addresses questions of whether health technologies are feasible, acceptable, efficacious and effective, for whom they work and how they compare with alternatives. This is done through systematic reviews (**NIHR HTA**), rigorously designed clinical trials and process evaluations (**NIHR PGfARs**), multi-method feasibility studies and other high quality designs (*Cochrane Database of Systematic Reviews, Cancer Research, Health Technology Assessment Reports, Heart, JAMA, Journal of Clinical Oncology, Lancet Neurology, Stroke*). Methodological research to develop and advance methods of health technology evaluation (**NIHR Research Methods Fellowship**) is also conducted.

The cross-cutting *Medical Sociology* group (**Exley, Finch, Moffatt, Rapley**) has considerable expertise in applying theoretical approaches to studying health and health care, and provides

qualitative and quantitative research methodological expertise (*Social Science & Medicine, PLOS One*). Members lead substantive evaluations in three **NIHR PGfAR** projects including Transition and a **NIHR HTA** funded study of donor ex-vivo lung perfusion in UK lung transplantation.

Future strategy

We will deliver on our research strategy launched in 2010 by undertaking research that: influences the development of policy, practice and service provision; contributes to the understanding of health and health care; contributes to public engagement to reframe societal debates on well-being; and develops the technical and personal skills of staff and students to maximise impact delivery. We will consolidate our research structure to build on our current successes. As we are starting to see, this structure is stimulating new working relationships between members of research themes and methodological groups, for example the Do-Well trial (**White, Howell, McColl, Moffatt,**), a £764K (**NIHR PHR)** collaboration of public health and life-course academics working with social scientists and the Newcastle Clinical Trials Unit. All new recruitment will align with the current areas of research strength. We will ensure that our ECRs have access to mentorship that is independent of line management, development opportunities, including coaching and specific financial support to deliver on their five-year research programmes. Through our public health platforms, we will continue to build the practitioner and policy-maker networks that are necessary for the delivery of translational research that is relevant to practitioners and provides direct benefit to patient-using health and social care services.

Maintaining critical mass is essential to our future and we will secure sustainable capacity by using our pooled resource model to support new and junior staff in building up teams, for example, by supporting PhD studentships. Building on our Silver Athena SWAN award, we will continue to support flexible working arrangements to ensure we retain high calibre staff. Widening our skills pool is a key strategic priority for the future and, specifically, we will grow our pool of allied health professionals (such as **Patterson**, **Kolehmainen**). This will complement our ongoing plans to increase capacity in strategically important research areas including; academic primary care, public health nutrition, chronic disease epidemiology, health economics, evidence synthesis and statistics. A further strand of our future strategy will be to exploit informatics capacity by building on our excellent cohorts / registers, and our strong links with NHS partners and Local Authorities. We are in an excellent position to link patient and public informatics with research-generated data. Finally, we will build on our collaborative working with the end users of our research by facilitating working together at all points in the research process, led by the Faculty Associate Dean for PPE (**Thomson**), through implementation of our engagement and impact policy so that pathways to impact are at the heart of all our research.

c. People, including:

i. Staffing strategy and staff development

We reviewed our staff structure during the REF assessment period and have recruited strategically to provide leadership in key areas including health economics (**Vale, Health Foundation** Chair) and health psychology (**Sniehotta**). We have remodelled our staff structure to build academic capacity and ensure sustainability for the future. We currently have 12 lecturers (28% of academic staff) and 13 professors (30%). All academic appointments align with our research themes: Applied Epidemiology (McKay [UoA3]), Life-course, Development and Ageing (**Parr, Patterson, Stephan**), Public Health Improvement (**Heslehurst, Newbury-Birch,** Foster), and Decision Making and Organisation of Care (**Presseau**); and/or methodological groups: Health Economics (**Brown, Ternent, Vale**); Health Psychology (**Sniehotta, Araujo-Soares**), Health Technology Evaluation (**Stocken, Muirhead**), and Medical Sociology (**Rapley**).

UoA2 academics and researchers have a strong track record of winning externally-funded Fellowships: **NIHR** Career Scientist (**Rankin**), Career Development (**Adams**), Post-doctoral (**Heslehurst**), Doctoral (***Davies, Hamilton, Jackson, Laing, Say, Wong***), Research Methods (***Gonzalo-Almorox, Basu***), and Clinical Academic Training Fellowships for nurses (***Patterson, Bhardwaj***); an **MRC** Population Health Scientist award (***Kolehmainen***); an **EPSRC** Discipline Hopping Award (**Brittain**); and two **Health Foundation** Doctoral Fellowships. This success has been echoed with awards of competitive PhD studentships from: the **ESRC** (***McSweeney, O'Neil, O'Donnell, Sherrington, Forrest, Kwasnicka, Tanner, Wildman, Remnant***), **MRC** (***Slack***),

Natural Environment Research Council (***Bramwell***), the **British Heart Foundation** (***Best***), the **Public Health Foundation of India/Wellcome Trust** (***Shomik***) and a **Commonwealth** studentship (***Oono***).

We have retained excellent academic and research staff through our career development structures and promotions. **Adams** and **Rodgers** were, for example, promoted to Senior Lectureships during the REF period. Our strategy of investing in new lecturers has been very successful; within 18 months of appointment six lecturers have already secured external funding; **Heslehurst** holds a NIHR Post-doctoral Fellowship, **Newbury-Birch**, **Presseau** and **Rapley** have been awarded funding as principal investigators and **Ternent** is a co-investigator on two NIHR HTA awards. They are also receiving peer recognition; **Presseau** was awarded the Early Career Award from the UK Society for Behavioural Medicine in 2012. We offer a vibrant, multi-disciplinary research environment for staff. In a recent survey, 98% of IHS respondents think the university is a good place to work (compared to 95% in the faculty, 92% in the university as a whole). IHS was described as having a '*friendly environment and continually striving to develop staff by providing excellent opportunities for learning*'.

Support and Development of Staff: Staff at all academic and research levels are fully supported to develop their careers, for example by supporting and mentoring staff to win external personal fellowships. During the REF assessment period four IHS female staff members (**Kaner, McColl, Rankin, Robinson**) were promoted to personal chairs and three held NIHR Career Scientist awards. We believe this to be a notable achievement reflecting our commitment to equal opportunities. **Bond**'s and **Eccles**'s international leadership in their research fields has been recognised with NIHR Senior Investigator Awards, whilst Adamson and **Robinson** have won NIHR Professorships in Translational Research. All new academics are able to bid for strategic and career development funds to pump prime research projects and are encouraged to co-supervise students at undergraduate and postgraduate levels with the involvement and support of more senior colleagues. We pair experienced academic and research staff with less experienced staff in order to provide guidance and mentoring; in peer review, writing funding applications, research governance, in the conduct of research to ensure that the highest standards are reached and that staff receive solid research training. As a cross-Faculty organisation, we actively encourage co-supervision of staff and students with colleagues from all three Newcastle University Faculties. We have recently financially supported the setting up of a Researchers' Association which discusses our policies, has external speakers and organises social activities.

In order to retain key skills and provide researchers with contractual stability, research contracts are reviewed six months before their end date to identify those 'at risk'. If there is a shortfall between contracts, staff are bridged using pooled non-research funds and we also support applications for Faculty-level funding (funded by the Wellcome Trust Institutional Strategic Support Fund). This system, and implementation of the 2008 Concordat to Support the Career Development of Researchers, gives staff funding and career continuity. All staff are encouraged to spend 10% of their time on training and personal development including methodological training The Newcastle Clinical Trials Unit has, for example, funded three trial managers to undertake the Newcastle Masters in Clinical Research. Extending current skill-sets is positively encouraged, for example **Adams** was supported to win a British Science Association Media Fellowship and to undertake a certificate in science communication at the University of the West of England. Careers advice is offered to research staff through the mentoring process, during their annual performance development review (PDR) and through career pathway reviews offered at the four year postdoctoral stage.

Athena SWAN Strategy: The IHS was awarded the Silver Athena SWAN award in 2011, the first silver award within Newcastle University. The panel specifically commented on the IHS '*approach to open-ended contracts, which recognised the need for security*'. Whilst women are highlighted within this national award, we strive for a good work-life balance for all staff. We will apply for a Gold award in April 2014. **Rankin** is an Athena SWAN Judging Panel member and chairs Newcastle University's Diversity Committee.

ii. Research students

We have a diverse postgraduate research student community (PhD, MD, MPhil), which has grown from 46 students in 2008 to 85 in 2012. Our PhD students include clinical fellows, staff PhDs and 40 registered international students during the REF period (including from Asia, Africa and South America). Some of this growth has resulted from our considerable success at winning large infrastructure funding with PhD studentships included, for example there are 16 PhD studentships across all partners (six to UoA2) included in the funding for Fuse. We have also been successful in bidding for financial support from the Faculty of Medical Sciences (FMS) to support our strategy of investing in PhDs, with six joint IHS-FMS studentships across our research themes and methodological groups. In 2011 Newcastle and Durham Universities were successful in their bid for a £9M ESRC North East Doctoral Training Centre (DTC). **Brittain** leads the social science and health pathway within the ESRC DTC which provides opportunities to access doctoral funding for interdisciplinary applied health research underpinned by robust social science methods and theory. We have also been successful in a £5M bid with Newcastle University Culture Lab. to the EPSRC for a DTC in Digital Civics. The Doctorate in Clinical Psychology (**McConachie, Rodgers**) provides strong research training in developmental disability and autism research and this was particularly commended in the 2012 re-accreditation report.

Doctoral training: All students have a supervisory team with complementary topic and methodological expertise to ensure that research is conducted to the highest standard. Formal supervision takes place at least monthly. In the recent HEA PRES, 94% of IHS respondents said their supervisors 'have the skills and subject knowledge to support my research' (against 89.5% for the sector). Postgraduate research (PGR) students are offered subject-specific and generic skills training through a selection of modules from the MSc in Public Health and Health Services Research (programme lead **Moffatt**) and a faculty programme. All PhD students are aligned to our research themes or methodological groups and they are encouraged to present their work at monthly research discussion forums and annual research days. There is an active postgraduate research student support group run by the students which meets monthly and which has financial support from IHS to arrange social activities and bring in speakers. The PGR group also produces regular PG newsletters. The IHS conference/travel fund is open to both staff and students, highlighting the importance that is placed on research dissemination and the fostering of external collaborations. Key postgraduate student achievements include: authoring high quality research papers, for example, Forrest (supervisors **Adams, White**), Dadvand (**Rankin**), and Lally (**Thomson, Exley**) were first author of *PLOS Medicine (2013), American Journal of Epidemiology (2011),* and *BMC Medicine (2008)* papers respectively. During the REF period, Doctor of Clinical Psychology trainees have co-authored 13 papers. Of our returned papers, 11% were co-authored by a student. ***Forrest, Spence, Goffe*** had oral presentations at the Society of Social Medicine Annual Scientific Meetings 2012 and 2013 with ***Forrest*** winning the prize for best pre-doctoral abstract in 2012; ***Albalawi*** was awarded a prize for best poster at the 6th Saudi Scientific International Conference; ***McCafferty*** was awarded funding from the Scottish Economic Society to attend the International Society on Priorities in Health Care conference (2012); and ***Tennant*** led a small research grant from the Newlife Foundation for Disabled Children.

d. Income, infrastructure and facilities

i. Research income

Our annual income increased from £4.8M in 2008-09 to £7.4M in 2012-13; an increase of 31%. A key feature of our income during the REF period has been the considerable increase in awards from UK central government (from £2.8M to £4.1M) and research councils (from £783K to £1.1M). Income is spread across the funding portfolio: infrastructure funding, personal awards, project funding and programme grants. Our focus on major funding streams will continue over the next five years whilst further targeting research councils and EU funding to maintain a diverse funding portfolio in a challenging economic climate.

Infrastructure and national collaborative awards: We have been highly successful in winning large infrastructure grants (**McColl, Vale**; **NIHR** Research Design Service 2008-12 £5.2M; 2013-18 £5M; Newcastle Clinical Trials Unit 2008-2012 £1.3M, 2013-18 £1.6M), the £800K **NIHR** Diagnostic Evidence Cooperative (**McColl, Stocken, Vale**); and collaborative awards (**White,** Adamson**, Kaner, Sniehotta, Vale**; **UKCRC** Fuse, 2008-13 £5M, 2013-18 £5.2M; **NIHR School for Public Health Research**, £2.2M; **White,** Adamson, **Adams, Kaner**; DH Public Health

Research Consortium (**White**, Adamson), £4.2M).

Both the RDS and the Newcastle Clinical Trials Unit have contributed to a significant increase in research grants across the FMS; there are currently 51 active trials plus a further 17 in 'set-up' following award. Fuse has facilitated significant infrastructure support to drive joint working across the North East Universities, NHS and voluntary sector, including 10 PhD students and eight academic posts to IHS, and a further seven post-docs and six PhD students will add to current capacity in 2013-18. UoA2 academics are leading two **NIHR PGfAR** (£3.9M) (**Colver, Robinson**) and collaborating on a further four **NIHR PGfAR** (**Bell, Deverill, Exley, Finch, McColl, Rapley, Vale**).

Cross-Institute awards: A key feature of our income has been the increase in successful awards involving other Institutes within Newcastle University and with other Universities. Examples include: the LiveWell programme (£2.2M; **MRC**) of research developing health interventions in the retirement transition (**White, Sniehotta**, **Moffatt,** Adamson, **Araujo-Soares**), the new CFAS cohort (£1.9M; **MRC**) establishing how ageing is changing across generations (**Bond, Jagger**), the UK Primary Biliary Cirrhosis Consortium (**Vale**, £6M; **MRC Stratified Medicine Programme**), two **NIHR PGfAR** (£4M; **Exley**, **Thomson**) and a £2.5M award from **Diabetes UK** (Adamson, **Sniehotta**), all with colleagues being returned in UoA1. A cross University bid between UoA2 (**Brittain, Finch, Robinson**) and CultureLab (UoA11) academics led to a £1.1M award from the **TSB**.

Project awards: Major (>£250K) project funding includes research into: fetal anomalies (**Rankin, NIHR Career Scientist** award £300K, **HQIP** £560K), participation and quality of life of adolescents with cerebral palsy (**Colver**, **Wellcome Trust** £260K), research into CT scans and childhood cancer risk (**Pearce**, **DH** £360K, **EU** £310K), two **NIHR HTA** funded trials (INVESTIGATE, £400K; **McColl, Deverill, Howel**) and parental incentives to increase uptake of immunisations (£270K, **Adams, Sniehotta**) and an **NIHR HS&DR** project grant on shared decision making (£260K; **Thomson**).

ii Infrastructure and facilities

The majority of UoA2 returned staff are housed within the custom built Baddiley-Clark Building (£26M) which opened in 2010 and represents a significant investment by Newcastle University in inter-disciplinary health and social science research. The move to this new state-of-the-art facility has enabled the co-location of key researchers within one building to facilitate research. The new building has excellent academic facilities including a range of formal and informal meeting rooms to facilitate networking and research collaboration, and also operates a hot desking system to ensure staff located outwith the Baddiley-Clark Building remain integrated. Staff come together regularly to attend staff meetings, research discussion forums, and external seminars. To further support our research, our staff have access to major facilities within the Faculty of Medical Sciences including four Clinical Research Facilities, MoveLab (physical activity), the Culture Lab (assistive technologies) and laboratory facilities in the Northern Institute for Cancer Research. We have an effective infrastructure of networks and collaborations which promote research at national and international levels within the academic community and with users of research. Our commitment to public engagement is reflected in our work with public and patient advocacy groups and organisations including Valuing our Intellectual Capital and Experience (VOICENorth; **Bond, Moffatt**) and NIHR INVOLVE, and with parents through our patient cohorts (ASD-UK, Dasl^{n}e; **McConachie, Parr**).

e. Collaboration or contribution to the discipline or research base

Our staff contribute to national (we have representation on five of the six NIHR funding panels and at each level of the NIHR personal Fellowship panels) and international funding and scientific advisory panels; act as editors or associate editors for learned journals (**Eccles** is Founding Editor-in-Chief of the journal *Implementation Science*); and organise and contribute to international scientific meetings (e.g**.** the 2009 Society for Social Medicine conference was held in Newcastle). **Jagger** collaborates with the Australian Centre of Excellence in Population Ageing Research. **Vale** is chair of the Campbell and Cochrane Economic Methods Group and on the advisory group for the NHS Centre for Reviews and Dissemination. **Colver** was Chair of the British Paediatric

Surveillance Unit to 2010 and founded the British Academy of Childhood Disability Strategic Research Group, chairing it to 2012; **Parr** is the current Chair. **Parr** chairs the Scientific Advisory Committee of the charity Research Autism. **Exley** and **Rapley** convene the British Sociological Association Special Interest Group in Applied Qualitative Health Research.

Selected International collaborations: Staff have fostered strong collaborations throughout the EU, leading or contributing to research projects and networks (**Colver**, Surveillance of Cerebral Palsy in Europe (SCPE), **Rankin**, European Surveillance of Congenital Anomalies (EUROCAT), **Pearce**, Multidisciplinary European Low Doses Initiative (MELODI)). **Sobgnwi** is a member of the WHO Expert Committee on the diagnosis of gestational diabetes and the American Diabetes Association Expert Committee on the diagnosis of diabetes. **LeCouteur** and **Parr** lead the International Molecular Genetic Study of Autism Consortium and **Parr** leads the group within the Autism Genome Project Consortium. Our ageing and health researchers are well represented in international committees; **Bond** is a member of the Scientific Committee of Alzheimer's Disease International, **Robinson** is the primary care representative on the European Leaders Dementia Network. **Jagger** sits on the Scientific Advisory Board of the EU Joint Programming Initiative 'More Years, Better Lives'. **LeCouteur** is on the scientific committee of European Autism Action. **Anderson** leads and coordinates the European Alcohol Policy Research Alliance and the European Addictions Research Group. **Anderson** and **Kaner** are members of the Science Group of the European Alcohol and Health Forum.

Awards/honours: Four senior staff members hold personal awards and six have been awarded Fellowships from learned societies. **Robinson** holds an NIHR Professorship in Translational Research, **Bond** and **Eccles** are NIHR senior investigators, **Rankin** holds a Fellowship through distinction from the Faculty of Public Health, **Anderson** and **Kaner** are fellows of the Royal College of Physicians by distinction. **Sniehotta** holds an honorary Fellowship from the European Health Psychology Society (EHPS) and **Bond** and **Jagger** are fellows of the Gerontological Society of America. **Araujo-Soares** was awarded the 2012 Early Career Award from the EHPS. **Robinson** was appointed as the RCGP National Clinical Champion for Dementia. Five staff members have been elected President of learned societies; **Anderson** (International Scientific Society on Brief Interventions for Alcohol), **Eccles** (UK Society for Behavioural Medicine), Pennington (European Academy of Childhood Disability), **Sniehotta** (EHPS) and **White** (UK Society for Social Medicine).

Contribution at national government level: **Robinson** is the primary care lead on the National Dementia Strategy Implementation Committee and a member of the UK Ministerial Advisory Group on Dementia Research. **Howel** serves on the DH Committee on the Carcinogenicity of Chemicals in Food, Consumer Products and the Environment, **Pearce** on the DH Committee of the Medical Aspects of Radiation in the Environment and **Jagger** on the ONS National Population Projections Expert Advisory Panel. **LeCouteur** is external advisor to the DH Adult Autism Strategy/Statutory Guidance Group. **Anderson, Jagger** and **Thomson** have provided expert evidence to government select committees. **Thomson** was a member of the DH Shared Decision Making Programme Board. UoA2 academics have chaired NICE committees including: **Kaner** chaired the NICE Programme Development Group on alcohol prevention, **Eccles** the NICE Implementation Advisory Group and **Stansby** the National Topic Expert Group that developed the National Quality Indicators in Venous Thromboembolism for NICE. **Bell**, **Thomson** and **LeCouteur** are members of NICE guideline development groups. **Parr** and **Colver** are members of the Medicines for Children Research Network Neurosciences panel.

Contribution at international government level: UoA2 academics act in advisory roles including **Anderson** who is an advisor and consultant on alcohol and addictions policy to African, European and Headquarters offices of the WHO and the European Commission, and is an expert member and deputy chair of the World Economic Forum's Global Agenda Council on Health and Well-being. **Muirhead** serves on the International Commission on Radiological Protection and **Eccles** is chair of the Canadian Scientific Advisory Board Implementation Advisory Group for Knowledge Transfer. **Thomson** was a member of the WHO Patient Safety Classification Working Group.