

## Health and Social Care and Healthcare Sciences at Manchester Metropolitan University

Manchester Metropolitan University (MMU) has considerable strength in health, social care and healthcare science. In the recent REF health/healthcare sciences research scored particularly well in the impact category and was ranked 12<sup>th</sup> in the UK for overall research power. The University has four centres for health and social care-related research and knowledge exchange:

- Centre for Health: Disability, Ageing and Wellbeing
- Centre for Healthcare Science Research
- Social Change: Community Wellbeing Research Centre
- Health, Exercise and Active Living (HEAL) Research Centre

1. The **Centre for Health: Disability, Ageing and Wellbeing** comprises researchers and practitioners spanning a range of academic disciplines within allied health and enabling professions, including psychology, physiotherapy, nursing, and speech and language therapy (see Table 1).

Ongoing research is funded by a range of funding streams including National Institute for Health Research (HS&DR), Alzheimer’s Society, Medical Research Council, ESRC, Bial Foundation, THET Partnership for Global Health, Nuffield, Astellas Pharmaceuticals.

<b>Table 1: Centre for Health: Disability, Ageing and Wellbeing</b>		
<b>Area of Strength</b>	<b>MMU Lead</b>	<b>Research programme includes</b>
<b>Ageing and Long-Term Conditions</b>	Professor Josie Tetley	<ul style="list-style-type: none"> <li>• Dementia,</li> <li>• Stroke,</li> <li>• Compassion, frailty,</li> <li>• Emergency medicine and ophthalmology,</li> <li>• Rehabilitation, technology and active ageing.</li> </ul>
<b>Health Services and Outcomes</b>	Dr Francis Fatoye	<ul style="list-style-type: none"> <li>• Patient experience, quality and service improvement, quality of care,</li> <li>• Patient-reported outcomes including quality of life,</li> <li>• Economic and service evaluations.</li> <li>• Practice development and evidence-based information on the outcomes of healthcare interventions,</li> <li>• Public health,</li> <li>• Alcohol impact and troubled families,</li> <li>• E-health,</li> <li>• Simulation in health education.</li> </ul>
<b>Applied Psychology and Wellbeing</b>	Professor Sarah Grogan	<ul style="list-style-type: none"> <li>• Health promotion and behaviour change,</li> <li>• Smoking cessation,</li> <li>• Body image and appearance focussed interventions to improve health,</li> <li>• Wellbeing and happiness,</li> <li>• Rehabilitation,</li> <li>• Coercive treatment,</li> <li>• Mental toughness and resilience,</li> <li>• PTSD.</li> </ul>

<b>Disability and Participation</b>	Professor Duncan Mitchell and Dr Janice Murray	<ul style="list-style-type: none"> <li>• Augmentative and alternative communication,</li> <li>• Communication impairment,</li> <li>• Learning disability,</li> <li>• Physical impairment and health care practice,</li> <li>• Participation of disabled people, including as co-researchers .</li> </ul>
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2. The **Centre for Healthcare Science Research** undertakes translational research to understand biological systems in disease, sensing and detecting by-products of biological systems in disease, sensing and detecting by-products of disease and contemporary challenges, including ageing and development of new technologies for personalised medicine (see Table 2).

Ongoing research is funded by charities etc. including the British Heart Foundation, Diabetes UK, Mencap, Nuffield, Sparks and the Sir Halley Stewart Trust; Research Councils such as MRC, NIHR, EPSRC and the Wellcome Trust; and industry partners including Glaxo Smith Kline, Unilever, Smith and Nephew, Nutricia and Genzyme.

<b>Table 2: Centre for Healthcare Science Research</b>		
<b>Area of Research</b>	<b>MMU Lead</b>	<b>Research programme includes</b>
Cognitive Motor Function	Professor Ian Loram	<ul style="list-style-type: none"> <li>• Innovative ultrasound analysis of muscle function,</li> <li>• Human balance,</li> <li>• Postural control,</li> <li>• Locomotion,</li> <li>• Visually guided manual control,</li> <li>• Modulation of motor control through fear of falling,</li> <li>• Gait analysis in diabetic foot pathology and biomechanics.</li> </ul>
Cardiovascular Research	Professor Yvonne Alexander	<ul style="list-style-type: none"> <li>• Vascular calcification in atherosclerosis, diabetes and renal disease,</li> <li>• Endothelial progenitor cells and vascular repair,</li> <li>• Endothelial dysfunction, shear stress sensing in ageing, pregnancy and inflammatory diseases,</li> <li>• Identifying biomarkers to reduce the risk of stroke,</li> <li>• Small molecule drug discovery to improve vascular health.</li> </ul>
Food, Nutrition and Health	Dr Gethin Evans	<ul style="list-style-type: none"> <li>• Food safety and microbiology,</li> <li>• Bioavailability of functional foods,</li> <li>• Gastrointestinal processing of ingested nutrients,</li> <li>• Metabolic and satiety effects of nutrient ingestion,</li> <li>• Fluid balance.</li> </ul>
Genetics, Cell and Molecular Biology	Professor Mark Slevin	<ul style="list-style-type: none"> <li>• Diabetes and wound healing,</li> <li>• Angiogenesis and inflammation,</li> <li>• Advanced glycation end products and diabetes,</li> <li>• Genetic and epigenetic control in disease and ageing,</li> <li>• Blood science and platelet function.</li> </ul>

Medical Microbiology	Professor Joanna Verran	<ul style="list-style-type: none"> <li>• Anti-adhesive, antimicrobial and hygienic surfaces and coatings for food health,</li> <li>• Coatings to combat pin tract infections,</li> <li>• Atmospheric pressure plasmas for use in healthcare and food industry systems,</li> <li>• Novel and phage-based antimicrobials,</li> <li>• Periodontal medicine and prosthodontic infection control.</li> </ul>
Neuromuscular and Skeletal Ageing Research Group	Dr Jamie McPhee	<ul style="list-style-type: none"> <li>• muscle and bone loss (sarcopenia and osteoporosis),</li> <li>• assessing physical tasks and metabolism,</li> <li>• investigate genetic and inflammatory biomarkers in the blood.</li> </ul>

3. The **Social Change: Community Wellbeing Research Centre** comprises researchers from diverse academic traditions; primarily psychology, social care and social work (see Table 3). Together with community partners, the Centre undertakes research that informs theory, policy and practice, enhances effectiveness of organisations, celebrates diversity and works within a social justice framework to enhance people's lives, health and wellbeing. The focus is on social change within communities, workplaces and households, and implications for wellbeing across the life course.

Ongoing research is funded by charities and other agencies including Alcohol Research UK and Aquarius, Thomas Pocklington Trust, Public Health England, Big Lottery, NIHR SSCR, ESRC, JUC SWEC. MMU has regional partnerships with local authorities in the North West and East Midlands for the third cohort of Step Up to Social Work programme.

<b>Table 3: Social Change: Community Wellbeing Research Centre</b>		
<b>Area of Research</b>	<b>MMU Lead</b>	<b>Research programme includes</b>
Substance Use and Addictive Behaviours	Professor Sarah Galvani	<ul style="list-style-type: none"> <li>• Substance use and domestic abuse,</li> <li>• Substance use in social care education and practice,</li> <li>• Substance use within marginalised communities,</li> <li>• Substance misuse policy making for public health,</li> <li>• Substance use practice guidance and curriculum development.</li> </ul>
Safeguarding and Critical Professional Practice	Professor Hugh McLaughlin	<ul style="list-style-type: none"> <li>• welfare outcomes and services provided for service users of children's and adult safeguarding services,</li> <li>• safeguarding and critical professional practice,</li> <li>• critically assess the outcomes of service provision,</li> <li>• developing participatory research approaches within a social justice framework.</li> </ul>
Critical and Community Psychology	Professor Rebecca Lawthom	<ul style="list-style-type: none"> <li>• wellbeing and community engagement,</li> <li>• critical approaches to study at the intersections of gender, sexuality, class, ethnicity and disability,</li> <li>• participative and collaborative approaches and is allied to communities.</li> </ul>

4. The **Health, Exercise and Active Living (HEAL) Research Centre** comprises researchers from across the disciplines of exercise science including biomechanics, physiology and psychology (see Table 4). The centre works collaboratively with others across the university where disciplinary expertise. The focus of the group is upon applying sound scientific principles to study human adaptations to exercise stimuli in a variety of settings and with diverse population groups.

Ongoing research is funded by charities and other agencies including MOVEAGE, the Brazilian Government, UK Sport, British Swimming, the NIHR, the Leverhulme Trust, Parkinsons UK Monitoring.

<b>Table 4: Health, Exercise and Active Living (HEAL) Research Centre</b>		
<b>Area of Research</b>	<b>MMU Lead</b>	<b>Research programme includes</b>
Motor Cognition	Professor Paul Holmes	<ul style="list-style-type: none"> <li>• Stroke rehabilitation through mental imagery</li> <li>• Psychological and physical wellbeing through outdoor and adventurous activity</li> <li>• Motor learning and the psychophysiology of motor action</li> <li>• Anxiety, stress and coping</li> </ul>
Exercise and Ageing Physiology	Dr Gladys Pearson	<ul style="list-style-type: none"> <li>• Genetics of sport and exercise adaptation</li> <li>• Muscular training and adaptability in dystrophy and cerebral palsy</li> <li>• Nutritional supplementation, exercise and musculotendonous adaptation in ageing</li> <li>• Muscle and tendon adaptations to disuse</li> </ul>
Biomechanics and Long Term Conditions	Professor Neil Fowler	<ul style="list-style-type: none"> <li>• Movement dynamics in dwarfism</li> <li>• Low-back pain and spinal mechanics</li> <li>• Maxillofacial injury and protective equipment</li> <li>• Bone density and body composition</li> <li>• Clinical gait analysis</li> </ul>

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