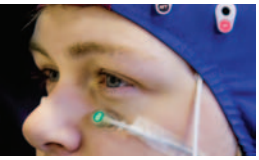
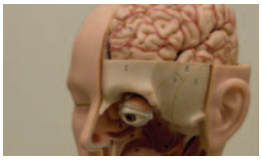
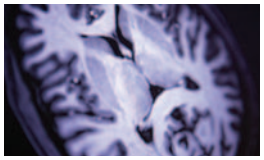
MANCHESTER 1824
The University of Manchester

Faculty of Medical and Human Sciences



The Institute of Brain Behaviour and Mental Health

Prospectus 2013 and Five Year Strategic Plan

Contents

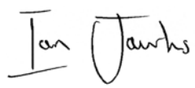
Dean's introduction

I am delighted to introduce the 2013 prospectus for the Institute of Brain, Behaviour and Mental Health in the Faculty of Medical and Human Sciences at The University of Manchester. Our Faculty has now implemented a new strategy and structure which is intended to transform our contribution to research and education in medicine and health. We aim to build on the reputation of Manchester as a world leading centre for biomedical sciences and their clinical application.

The Faculty and the Institute of Brain, Behaviour and Mental Health are committed to achieving excellence through an ethos of collegiate and collaborative working involving all of our Faculty Schools and Institutes and the highest quality interactions with other University of Manchester Faculties, our NHS partners via MAHSC (Manchester Academic Health Science Centre) and our broader higher education and NHS partners in the new GM-AHSN (Greater Manchester Academic Health Science Network).

Importantly the Institute of Brain, Behaviour and Mental Health is part of a matrix structure (Figure 1) which is deliberately designed to break down barriers and encourage cross cutting interactions with staff in other Schools and Institutes. Staff are encouraged to affiliate to other Faculty structures and a high level of interaction is being achieved as illustrated in Figure 2. This type of cross linking is crucial to achieving the full benefits for education and research of our unusual breadth of health disciplines.

This document provides an overview of the Institute in 2013 and is work in progress. In the near future the Institute will host a visit by an international external advisory panel to help guide further developments and provide. The Institute already has a set of truly outstanding achievements and excellent staff but we have a lot more to do to achieve our ambitious objectives. I am grateful to all of the academic and support staff in the Institute for their contribution to the success to date and further plans.



Ian Jacobs
Dean, Faculty of Medical and Human Sciences
Vice President, The University of Manchester
Director of Manchester Academic Health Science Centre
Professor of Cancer and Women's Health

Faculty of Medical and Human Sciences Structure

Matrix of six Faculty Institutes and five Faculty Schools intended to facilitate cross cutting interactions

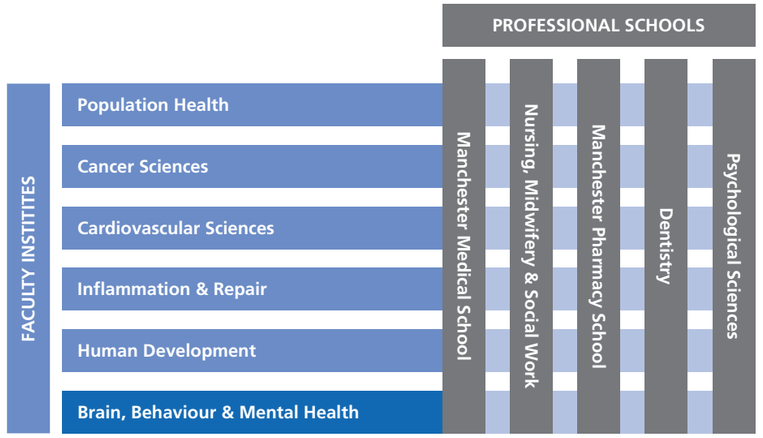


Figure 1
Faculty Structure – matrix of six Faculty Institutes and five Faculty Schools intended to facilitate cross-cutting interactions.

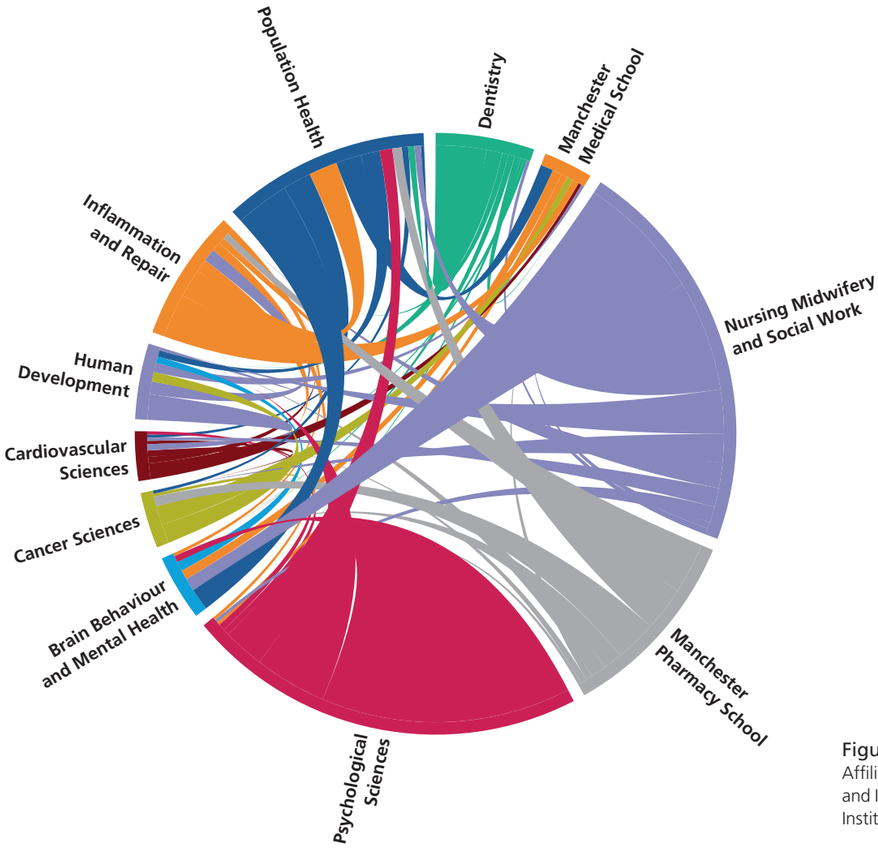


Figure 2
Affiliations across Faculty Schools and Institutes (showing the School/ Institute providing the affiliation)

The University and Faculty

Our Academic and Support staff in the Faculty of Medical and Human Sciences (FMHS) number over 2,000 and work to deliver three core priorities:

- Development and delivery of the highest quality education and training for health professionals and scientists.
- Conducting outstanding, world leading research in the biomedical and health sciences
- Social Responsibility to make a contribution to the 'greater good'.

Our University has a tradition of world-leading innovation which has led to a stepwise improvement in the health, wealth and wellbeing of populations across the world since the industrial revolution. Sitting at the heart of the City of Manchester, which is a global hub, excelling in arts, music, sport and commerce, the University is a beacon for research and education with a deep commitment to the economic transformation of Manchester and the North West of England. Tracing its origins back to John Dalton's Mechanic's Institute and John Owen's philanthropic desire to educate the local population, The University of Manchester was England's first 'civic' and now its largest campus-based university. No fewer than 25 Nobel Laureates have worked at the University and since the merger of the Victoria University of Manchester with UMIST in 2004 we have delivered in excess of 1,600 invention disclosures and formed 17 new companies attracting £117m in third party benefit, demonstrating a formidable track record of commercialisation.

Each year we train over 400 doctors, 90 dentists, 150 pharmacists and 900 nurses, midwives and allied health professional staff. We are the largest supplier of healthcare graduates to the NHS within the North West of England but many of our graduates go on to deliver healthcare provision and scholarship in developed and developing health systems across the globe. Through the use of cutting edge technology, the highest quality workplace-learning environments and a highly trained educational faculty, we strive to deliver a personalised learning experience to each of our students so that they develop a real sense of identity and belonging to a world-class university. This in turn fully prepares them for life after graduation making the 'Manchester-made' graduate the first choice for healthcare employers. Our extensive postgraduate and continuing professional development programmes are hosted by our new Faculty Graduate School providing support and training to postgraduates undertaking a diverse range of study from short term professionally linked programmes through to research training in multidisciplinary areas. We believe that we are a complete resource for lifelong healthcare learning.

The scale, breadth and structure of our Faculty provide outstanding opportunities for basic biomedical research discoveries to be rapidly translated into effective new therapies with a strong emphasis on knowledge transfer and partnerships with industry. Our new matrix structure is designed to enhance opportunities for novel and multidisciplinary research (diagram). The matrix involves five schools (Medicine, Dentistry, Pharmacy, Psychological Sciences and Nursing, Midwifery & Social Work) and six research institutes (Cancer Sciences, Cardiovascular Sciences, Population Health, Brain, Behaviour & Mental Health, Human Development, Inflammation & Repair) with an emphasis on affiliation across these structures. The leadership team for each of the Institutes involves clinicians, basic scientists and healthcare researchers from both our own Faculty and our sister Faculty of Life Sciences. Our academics have the benefit of access to the large, stable population in the North West providing unique opportunities to study and address most causes of disease and deprivation. The opportunities are further enhanced by strong links to our partner Faculties (Humanities, Engineering, Physical Sciences, and Life Sciences) and the NHS through the Manchester Academic Health Science Centre (MAHSC). These partnerships facilitate rapid translation into practice and targeted biomedical, technological and psychosocial research based on clinical need.

In addition to our research and education activity, the Faculty is committed to make a major contribution to the greater good for society by contributing to solutions of the major challenges of the 21st century and the social and economic success of our local, national and global communities. We will ensure that social responsibility is embedded within all of our education and research activities, ensuring the highest ethical standards of professional practice from our staff and students. We are committed to equality and diversity in all our activities and to building on successful programmes such as the Manchester Access Programme which targets talented students from underrepresented backgrounds and a wide ranging global health programme which will help deliver sustainable capacity building within the health systems of developing economies.

Whether you are a visitor or a prospective student, staff member or collaborator, we hope that you will be engaged by the enthusiasm and vibrancy of our students and staff, our commitment to improving health and quality of life and the diversity of opportunity in research, and education that our Faculty has to offer.

Executive Summary

The Institute of Brain, Behaviour and Mental Health (IBBMH) is one of six new Faculty Institutes established in August 2012. IBBMH comprises four Centres of basic and clinical research expertise, three of which are jointly with the School of Psychological Science (SPS): Centre for Mental Health and Risk; Centre for Developmental Science and Disorders; Centre for Clinical and Cognitive Neuroscience; Centre for New Treatments and Understanding in Mental Health (CeNTrUM).

Our overarching goal is to create an internationally leading institute of research and education in cognitive science, mental health sciences and clinical neuroscience. Our core research model is one of translational research and innovation pipelines, leading from basic biological, cognitive and developmental sciences into models of normal and abnormal function through to developing theory-driven applications and interventions, then evaluating them in health and disease in the context of Manchester Academic Health Science Centre. Our two translational priorities in year 1 are dementia and addictions.

Our infrastructure is world class particularly in three areas: neuroimaging, including molecular imaging at WMIC, one of only 2 active neuroscience PET centres in the UK; biostatistics; computer science, with major e-health and m-health initiatives. Our principal NHS partners are Manchester Mental Health and Social Care Trust (MMHCT), Central Manchester Foundation Trust (CMFT), Lancashire Care Foundation Trust (LCFT), Salford Royal Foundation Trust (SRFT) and Greater Manchester West Foundation Trust (GMWFT). Each of these Trusts provides salary support for IBBMH academic staff. As a result of our research activity, Manchester MHSC Trust has the 2nd highest NIHR Research Capability Funding award of the 60 mental health trusts nationally.

Prior to baseline, UoM Psychiatry-Psychology was ranked 6th best in Europe in terms of average citations per published output 2000–2010, at 14.9, behind Cambridge (19.9), Oxford, Max Planck, KCL, UCL (Thomson-Reuters ESI 2010). Since 2009, our core staff have won 22 major (revenue > £500k) grant awards totalling £25.4m.

We have strong engagement with MRC and with NIHR, with 4 NIHR Senior Investigators and 6 chief investigators on NIHR programme grants. Since 2004 we have been the joint Coordinating Centre for the NIHR Mental Health Research Network.

Our objectives are to:

(i) Continue to develop a focussed strategy, with new collaborations between members and new co-ordinated strategic collaborations with other Schools and Faculties.

(ii) Increase the value of grant income, especially RCUK income, maximising directly allocated costs and contribution.

(iii) Improve quality of published outputs with a smaller number of more highly cited papers.

(iv) Increase numbers of Postgraduate Research (PGR) students, with increasing focus on international students.

(v) Increase financial contribution, including enhancing our Postgraduate Taught (PGT) and CPD strategy.

(vi) Build on our world class research infrastructure and facilities.

(vii) Engage with and contribute to evolving Manchester Academic Health Science Centre (MAHSC) strategy.

(viii) Recruit, support and retain outstanding individuals. Enhance the performance of current staff through mentoring and support.

(ix) Engage fully with the University's Social Responsibility and Environmental Sustainability agenda.

(x) Enhance and expand undergraduate teaching and learning in mental health.

Organisation and Resources

The Institute sits within the Faculty of Medical and Human Sciences (FMHS), as shown in Figure 1.

The sheer scale and range of the Faculty's activities, and very strong links with NHS partners provides outstanding opportunities for sharing ideas across teaching and research. The School enjoys strong relationships across the Faculty, with many shared networks and collaborations. More details of the Faculty are available online. http://www.mhs.manchester.ac.uk/about-us/

The Institute of Brain, Behaviour and Mental Health comprises four Centres of basic and clinical research expertise. Three of these are jointly with the School of Psychological Science (SPS). The fourth (Centre for Mental Health and Risk) is currently limited to core IBBMH staff. SPS retains the Manchester Centre for Health Psychology.

As a cornerstone to our strategy, we have deliberately chosen to head three of our four Centres with highly research active, senior affiliated (rather than core) academics from SPS. The rationale for this is to generate wholly new structures in pursuit of the main research goal of the FMHS reconfiguration, which is to produce a step change in the extent and quality of research, and emphasise inclusiveness. In doing this, we have had to address some risks: a dual management and reporting structure; a new workload for centre leads with no reduction in SPS responsibilities in the short term; and the initial unfamiliarity of Centre Leads with some of the staff they manage and some key teaching activities, especially taught undergraduate (UGT) medicine. The management situation has been streamlined by the decision to make these Centres jointly managed with, and owned by, SPS, whose existing substructure will realign to become the same as the IBBMH centres.

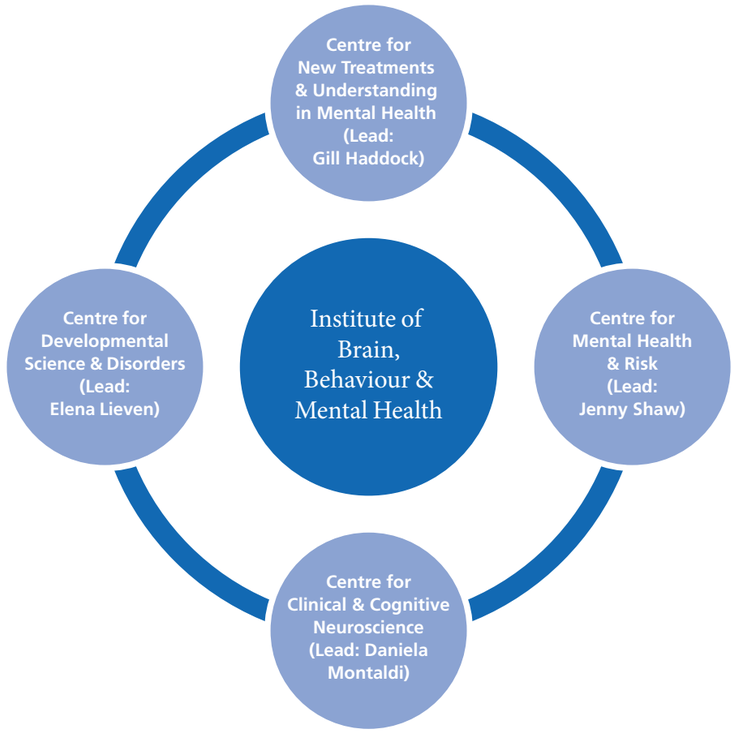


Figure 3
Caption required?

Chapter 2

Leadership is provided by the following Centre Leads:

- Mental Health and Risk – Professor Jenny Shaw
- Developmental Science and Disorders – Professor Elena Lieven
- Clinical and Cognitive Neuroscience – Professor Daniela Montaldi
- Centre for New Treatments and Understanding in Mental Health (CeNTrUM) – Professor Gillian Haddock

Institute Senior Management Team

The Senior Management Team comprises the four Centre Leads and the following:

- Professor Shôn Lewis – Institute Director
- Andrea Hutcheson – Head of School Administration
- Dr Mike Doyle – PGT and CPD Lead
- Dr Roger Webb – PG Director
- Dr Richard Gater – UG Lead
- Ian Storer – Finance Manager

Other Key Institute Appointments

Athena SWAN Champion – Iracema Leroi
EU Champions – TBA
Fundraising Champion – Professor Anthony Jones
Sustainability Champion – Cheryl Cottrell
REF Lead – Rebecca Elliott
Global mental health theme Lead – Nusrat Husain
Screening and Prevention theme Lead – Alison Yung

Space

Total occupancy 2382 m² (IBBMH core only)

We are geographically diverse in terms of Estate, occupying large amounts of space in the Jean McFarlane Building together with smaller amounts of space in the Stopford Building, Williamson Building, Simon Building, AV Hill Building and Wolfson Molecular Imaging Centre. The Institute also has an off campus presence in Central Manchester University Hospitals NHS Foundation Trust, Salford Royal NHS Foundation Trust and Lancashire Teaching Hospitals NHS Foundation Trust owned locations. IBBMH staff employed within the School of Psychological Sciences are based in three locations on the main campus – Zochonis Building, Ellen Wilkinson Building and Coupland I.

Joint Institute/NHS Resources

Our principal NHS partners are Manchester Mental Health and Social Care Trust, Central Manchester Foundation Trust, Lancashire Care Foundation Trust, Salford Royal Foundation Trust and Greater Manchester West Foundation Trust. Each of these Trusts provides salary support for IBBMH academic staff and university staff through honorary NHS contracts provide clinical support. MMHSCT contributes to posts in adult and old age psychiatry and clinical psychology; CMFT in child and family mental health; LCFT in adult and forensic; GMWFT in early psychosis and clinical psychology.

PSS Resources

Head of Administration – Andrea Hutcheson.
Operations Manager – Cheryl Cottrell
Institute Administrator – Helen Haslam-Mousawi

There are 34 members of PSS staff in the Institute (Clerical, Secretarial, Technical, Administrative and IT). Staff supporting Postgraduate Education and Research Administration are managed within separate, Faculty-led, offices.

Of those staff (28.7 fte), 22% are funded by the University, a further 10% from 'other' sources (including Trust recharges) and the remaining 68% from grant income.

Institute Professoriate

Health and Risk Sciences	Developmental Science and Disorders	Mood Disorders and Psychosis	Clinical and Cognitive Neuroscience
Jenny Shaw Louis Appleby Nav Kapur	Elena Lieven Jonathan Hill Jonathan Green Gina Conti-Ramsden	Gill Haddock Shôn Lewis Kathryn Abel Bill Deakin Ian Anderson Alison Yung Max Marshall Rachel Calam Alison Wearden Adrian Wells Christine Barrowclough David French Tony Morrison	Daniela Montaldi Karl Herholz Stuart Pickering-Brown Mike Horan Alan North Anthony Jones David Mann Alistair Burns Matt Lambon Ralph Wael El-Deredy Sonja Kotz

Partnerships

Internal

(i) IPH (Institute of Population Health) Centre for Biostatistics. Mental health is a major research focus for **Biostatistics** (Dunn, Emsley, Roberts particularly) as well as Health Economics (Davies). This group attracts the highest level of MRC methodology funding in the UK, with a mental health focus for complex intervention trials. IBBMH is central to the planning of the proposed MAHSC CTU, a vital development for clinical trials.

(ii) IPH Centre for **Health Informatics**, including NIBHI (Buchan). E-mental health and m-mental health are important new developments funded by MRC (Lewis) which are part of the MAHSC m-Health Ecosystem which includes a range of academic, NHS and industry (pharma, telecoms, informatics). Mental health is a focus of the MRC Health e-Research Centre (HeRC).

(iii) IPH Centre for **Imaging Sciences**

(iv) **SNMSW** Mental Health Research Group (Lovell)

(v) **School of Pharmacy** is under new leadership (Marshall) and we will actively seek new collaborations eg with new (2013) professor of pharmacy Neill in animal models of schizophrenia.

(vi) **FLS Neuroscience**. We will strengthen existing collaborations between our prioritised dementia translational research, plus three other areas in the first instance: neuroinflammation; developmental neuroscience; biological clocks. Joint workshops have been held in 2013, planned for spring 2013.

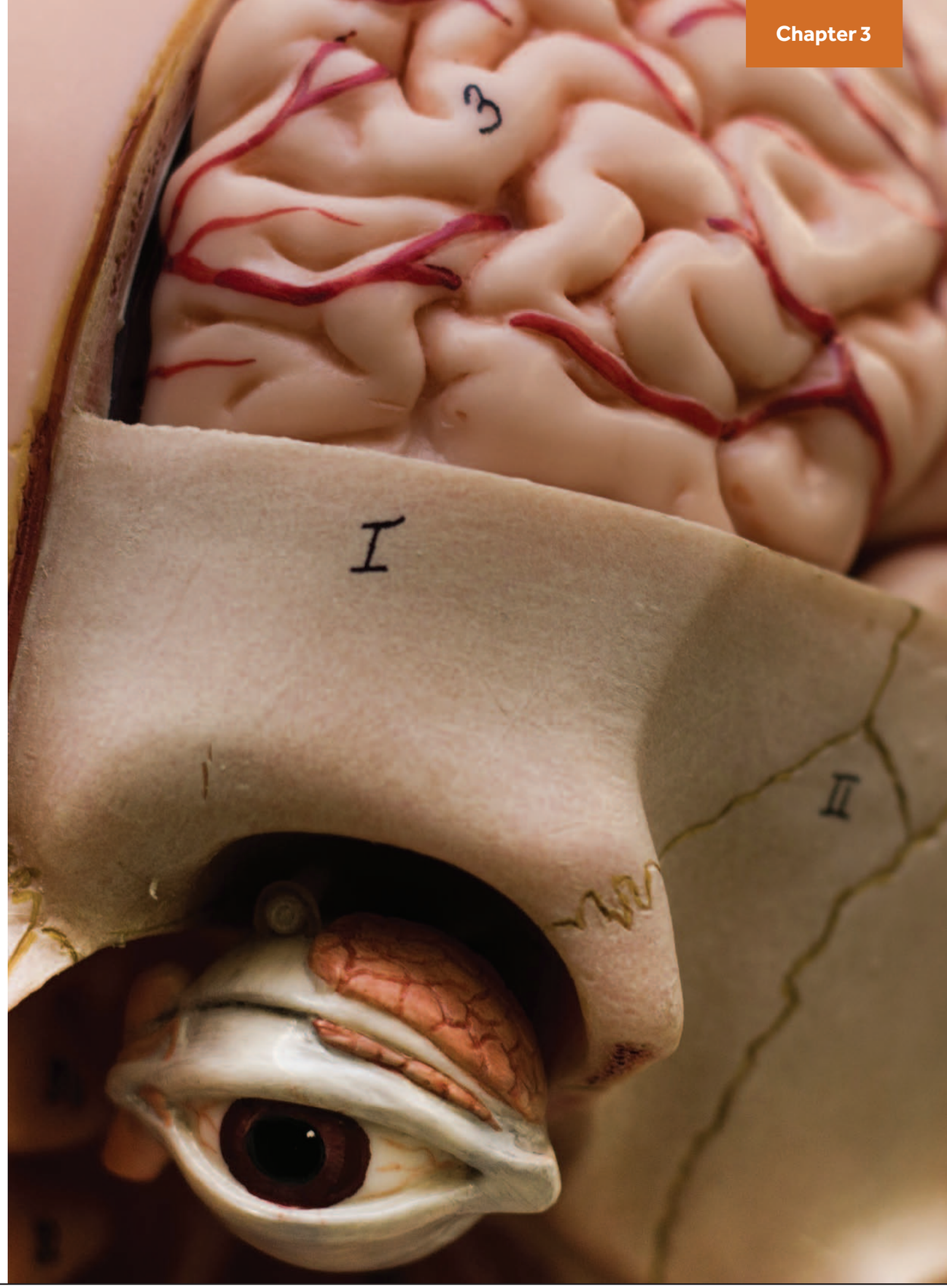
Northwest

We are also developing (Lead Haddock) strategic research collaborations with the Universities of Liverpool and Lancaster in three areas: psychosis, addictions; developmental science and disorders (ESRC Centre application submitted May 2013; Lieven)planned).

Industry partnerships.

Our strategy is not to be involved in running phase 3 regulatory studies for industry, but to seek and develop strategic, often precompetitive, collaborations with multiple pharma companies for drug discovery. The P1vital collaboration in mood disorders and schizophrenia (Deakin) with 5 companies is one example, the NewMeds EU IMI funded programme in schizophrenia (Lewis) with 8 companies is another. We will continue carefully to grow these collaborations. We are growing very quickly our collaborations with software, computing and telecoms companies in the m-mental health research and innovation programme in the MAHSC m-Health Ecosystem (Lewis).

Chapter 3



IBBMH Aims and Strategic Objectives

The Institute's overarching goal is to create an internationally leading institute of research and education in cognitive science, mental health sciences and clinical neuroscience at The University of Manchester.

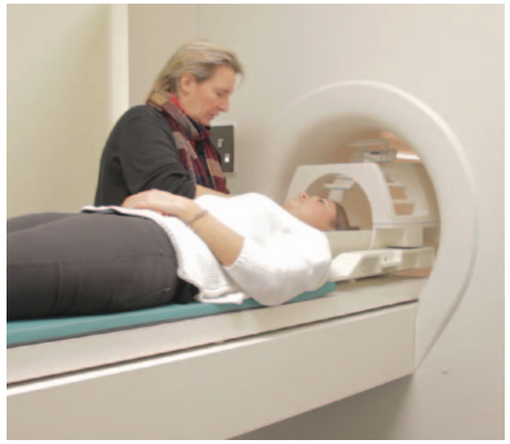
Our core research model is one of translational research and innovation pipelines, leading from basic biological, cognitive and developmental sciences into models of normal and abnormal function through to developing theory-driven applications and interventions and evaluating them in health and disease. Basic science research into understanding cognitive processes and mechanisms has an important place, in some cases feeding through to translational research, in others as high quality research in its own right. Our four component Centres are designed to bring together established and emerging expertise in basic and translational science.

Our research uses a range of methodologies from genetics/genomics and cell biology; electrophysiology and eye-tracking; advanced biostatistics, epidemiology and informatics; developmental sciences, though to qualitative research and implementation science. Our neuroimaging includes structural and functional MR platforms with advanced image analysis. We pioneered pharmaco-MRI research in the UK. We are one of just 2 UK campuses with a molecular imaging (PET) facility where we run research into dementia and neurodegeneration, pain, and psychosis and mood disorders. MAHSC and other academic NHS and non-NHS partners will provide the clinical test bed for our translational research.

Since 2009, our core staff have won 22 major (revenue > £500k) grant awards totalling £25.4m. This comes with the highest overhead contribution in FMHS, at 30%. As a result, our main NHS partner, the MAHSC-affiliated Manchester Mental Health and Social Care Trust has the 2nd highest NIHR Research Capability Funding award of the 60 mental health trusts nationally. We have strong engagement with MRC and with NIHR, with four NIHR Senior Investigators (Deakin, Challis, Lewis, Lambon Ralph) and six chief investigators on NIHR programme grants (Marshall, Kapur, Challis, Morrison, Guthrie, Jones); plus since 2004 we have jointly managed the NIHR Mental Health Research Network.

As an immediate priority, we will strengthen and consolidate translational research pipelines in:
- dementia and neurodegeneration
- addictions

In view of their translational research potential, attached burden of disease, availability of MRC and other targeted funding, and the existence of relevant research subgroups to be brought together for synergistic effect. This will be achieved through investment in new mission-critical posts and enhanced collaborations with the Faculty of Life Sciences and other Institutes. These and other strategic research priority areas are flagged under each Centre section below.



Objective One: To continue to develop a focussed strategy, with new collaborations between members and new co-ordinated strategic collaborations with other Schools and Faculties

Objective One KPIs
Collaborative grant proposals involving members of different schools and faculties

Research meetings between different schools and faculties; visiting lecture series

Enhanced translational research: groups collaborating along translational pipelines and into MAHSC

Identify key honorary staff

Coordinated estates strategy

The largely affiliate-led structure of IBBMH is intended to yield new collaborations between IBBMH core and affiliate members particularly from SPS. As of May 2013, we have 142 affiliate members from across FMHS and FLS. Within a wide network of collaborations, our crucial collaborations within FMHS and beyond SPS are outlined in the Partnerships section.

Objective Two: To increase the value of grant income, especially research council grant income

Objective Two KPIs
Increase number/value of grant applications by 50%, and MRC/ESRC applications by 100%, by 2014–2015 cf 2011–12

Increase value of total awards by 50% and MRC/ESRC awards by 100% by 2015–16 cf 2011–12

Increase presence on funding body panels

Two MRC programme grants awarded by end 2013

One MRC Centre award to be submitted 2016–2018

Increase industry research income by 50%

Current live grant income for IBBMH core by Centre is as follows: CDSD £2.62m; CCCN £5.42m; CMHR £6.15m; CeNTrUM £8.10m.

In the MRC's 2010 Mental Health Research Review, the discrepancy was flagged between the burden of disease and the national level of all research funding (see figure below). Point prevalence for major depression and anxiety disorders is 15%. The most frequent cause of death in younger men is suicide. Annual prevalence for all mental disorders in the UK is 16.7m, accounting for 18% of the burden of disease in the UK. GPs spend 35% of their time on mental health issues. Nearly 10% of 5–16 year olds have a mental health disorder which often persists into adulthood. Despite this, and excluding neurology, neuroscience and dementia, the MRC and NIHR together spent 7% (£91m) of their research budget on mental health (2007/8) and the Wellcome Trust 5% (£30m). Unlike other areas of health, there is no specific UK charity for mental health research. This underscores the importance for IBBMH of targeting generic funders such as MRC and Wellcome.

continued opposite

Manchester lags behind in MRC funding, in 2010/11 coming 6th of the "big 6" at £11.5m, behind the 5th (ICL) at £18m and the top, Cambridge, at £36m. In contrast, UoM tops the national table for funding from BBSRC and ESRC. The central issue is that the **number of applications to MRC** from UoM is much lower than others in the big 6 – yet the success rate is 29%, the second highest after Cambridge. The central plank of the strategy to push up MRC funding is therefore to submit more high quality applications. This will mean institutional targets against which progress can be measured: a 50% increase in applications by number and volume by 2 years. This will require, in conjunction with the Research Deanery (i) a culture change such that all academic staff are well versed in the **MRC Strategic Plan and Delivery Plan**, targeting funding streams and deadlines, using other funding sources to collect pilot data where needed; (ii) rigorous performance enhancement; (iii) iterative and timely internal peer review; (iv) a focus on particularly neglected funding streams, especially research training fellowships – with a target of two applications minimum per year from 2012/13. Although IBBMH currently is the highest earner of MRC funding per core FTE in FMHS, there is a real opportunity for further funding as we strengthen our translational research. We will capitalise on strategic feedback from board members: Hill is on the NMHB, and Dunn and Buchan on methodology panels and we will work to ensure continued presence on key boards and working parties as vacancies arise.

Our plans are to increase the number of applications to MRC, including training fellowships which IBBMH needs to increase markedly. In terms of large scale, strategic funding we will submit applications for the following:

1. MRC programme grants x 2 2012–14: Pickering Brown in early translational work in fronto-temporal dementia. This proposal will be strengthened by the forthcoming recruitment to a Chair in Cell Biology. Hill in developmental risk factors for childhood behaviour disorders building on current MRC funding.
2. MRC stratified medicine consortium in schizophrenia submitted 2013
3. MRC DCS grants x 2 2013–14, building on FMHS MRC C in C award.
4. MRC Centre in FTD Translational research Pickering Brown 2016–17

MRC successes in 2013:
1. MRC EM Challenge fund grant in schizophrenia £4.2m (Deakin), leading Nottingham and Cardiff
2. MRC Clinical Trials Hub led from Liverpool (Williamson) which involves IBBMH.
3. MRC DCS award £1.2m (Bucci).

continued overleaf

Objective Two: To increase the value of grant income, especially research council grant income *(continued)*

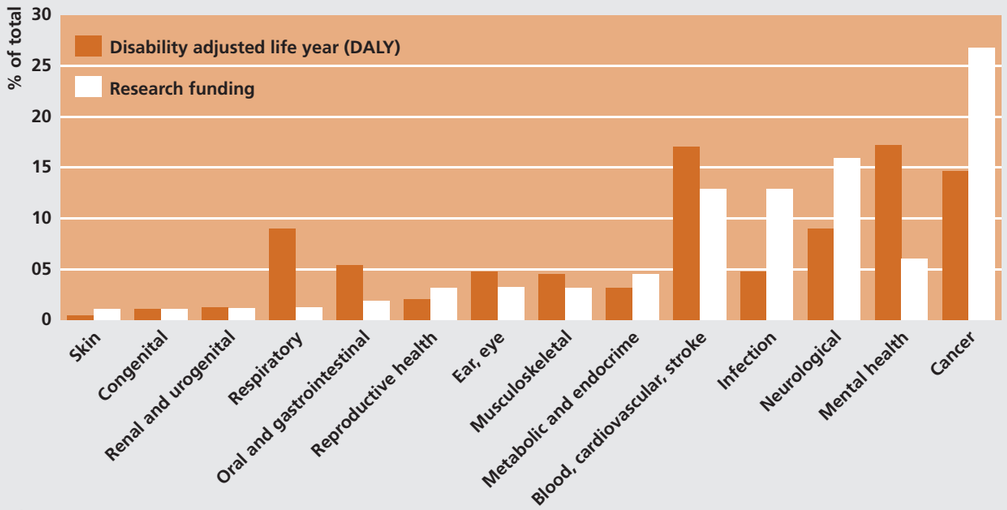


Figure 4
UK Research Funding (all funders combined) by disease area burden

Objective Three: Improve quality of outputs

Objective Three KPIs
Strategy of high cited papers, reduce low cited papers whilst protecting ECRs

Open access journal publication and funding support

UoM Psychiatry-Psychology is ranked **6th best in Europe** in terms of average citations per published output 2000–2010, at 14.9, behind Cambridge (19.9), Oxford, Max Planck, KCL, UCL (Thomson-Reuters ESI 2010). Nonetheless, a significant proportion (approx. 40%) of current published outputs are never cited. IBBMH core is already moving to a strategy of targeting journals with an IF of >8, with evidence of early success (see appendix). However, there is a risk here to PhD students (especially with thesis by publication) and early career researchers who need numbers of publications on their cv rather than high impact publications. We will work with FMHS to develop a policy to address this conflict.

We will move to publish increasingly in OA journals over the next 12 months, in line with MRC/Wellcome policy, and are in discussion with UoM Library Services over transitional and long term funding support for this.

Objective Four: Run high quality and validated PGR training and early career researchers, with mentorship and support.

Objective Four KPIs
Increase numbers of PGR students to minimum of 2 per academic member of staff

Ensure high completion and submission rates

Improve student satisfaction and productivity

Improve support and career structure for early career researchers, including NIHR ACF/ACLs

There are approximately 30 academic staff members who are eligible to act as main supervisors.

Recruitment The Faculty strategic plan has set ambitious targets for a 20% increase in postgraduate student numbers by 2017. In the Institute, initial assessment of PGR student numbers, and of the student to academic ratio, would indicate that there is capacity for an increase from the current figure of 30 students in total to approximately 45–50. There are a small number of experienced academics who are currently carrying a disproportionate workload for PGR supervision. All academics currently supervising less than 2 students will be encouraged to actively recruit. Postdoctoral research fellows and senior research fellows will be invited to join supervisory teams in the role of co-supervisor more frequently from the outset of students' programmes, to build future supervisory capacity.

A new protocol will be implemented to steer academics toward inclusion of PGR student funding in their grant applications. The Research Support Manager and the Institute PGR Director will support principal investigators during the bid development phase, to assess opportunities for inclusion of funding for PGR students. It is intended that a significant number of additional international PGR students can be recruited from Pakistan, via a memorandum of understanding that has been set up with Dow University in Karachi. Due to the novelty of this arrangement, and the progression risks associated with it, the Institute PGR Director and Faculty Postgraduate Recruitment Manager will work closely to monitor and evaluate the progression of students within this new initiative. We will work closely with the newly established Fellowship Academy for the Faculty of Medical & Human Sciences, to develop effective ways of encouraging and supporting a greater number of successful external doctoral fellowships funded by the MRC, NIHR and Wellcome Trust. We will liaise with the programme leads to actively recruit high quality PGR students from the MSc Psychiatry and MSc Forensic Mental Health courses.

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Progression A number of initiatives will enhance academic progression in PGR programmes. All new applicants will be assessed on admission by the Postgraduate Research Tutor according to potential barriers to progression, with more robust monitoring and support where appropriate during the first year. This will include the PGR Tutor attending the end of Year 1 continuation viva in the role of independent chair. This same procedure will apply to all MD degree students, as this particular group face specific barriers to progression. In line with Faculty policy, all PGR students will have a main supervisor, at least one co-supervisor, and an advisor. On admission, the composition of supervisory teams will be evaluated carefully by the Centre PGR Tutor and Institute PGR Director. Whenever possible, teams will be determined according to multidisciplinary need, so that no student is conducting their research without the necessary specialised methodological or clinical input. Also, teams that consist entirely of senior clinical academics will be avoided as this is likely to duplicate areas of supervisory experience, skill and knowledge. All new PhD applications will be reviewed by at least two academics, including one of the PGR Tutors.

The Institute PGR Tutor role will be split so that there will be two Tutors working across the Institute as a whole, with each one being primarily responsible for two Research Centres. As the Centres within the Institute are so widely spread, in terms of geography as well as academic focus, the Tutors will be better placed to monitor and assess progress within their Centres, via close liaison with their Centre Leads.

Experience A new PGR student representative has recently been appointed, and we will work actively with the representative to ensure effective communication between the Institute PGR staff, and the student body, around issues of recruitment, progression, training and support. The Institute PGT Trainer will actively identify specific training needs of students within the Institute, and work with the Faculty Training Team to meet those needs. IBBMH will also review the productivity of PGR students (in terms of peer reviewed presentations and papers), and develop mechanisms for monitoring next destinations.

Objective Five: Increase financial contribution

Objective Five KPIs
Higher number of fully FEC'ed awards with 40% contribution on grants 2013–14

Fundraising >£50 000 pa by 2014–15

Expand PGT and distance learning especially for overseas students

Develop CPD and distance learning strategy and financial model

IBBMH has a significant rate of **contributions/overheads** on grant income, at over 30%, but this needs to be maintained. Our increasing focus on MRC and ESRC funding will act to increase overall rate of contribution. In addition, we will maximise where appropriate the costing of directly allocated investigator time. Challenges and risk exist in two main areas while we work towards increasing overall research grant income: (I) EU funding does not conform to a FEC model and overheads are typically 20%, or less with some schemes (eg IMI). The strategic importance of increasing EU funding is nevertheless high and so will we seek to defray the low overheads by a fully inclusive approach to including all reasonable costs for support staff and consumables; (ii) Some NIHR funding schemes (eg RfPB; Programme grants for applied research; RCF awards) are not FEC'ed routinely and moreover are usually run through NHS Trusts with associated loss of revenue. Again, a careful inclusive costing programme will be employed with the ID or Centre Lead required to approve costing structures of all applications under these schemes to maximise research income and overhead recovery for the University.

IBBMH fundraising strategy is being drafted (Lead: Jones) and will initially target two areas: pain and prevention in mental health.

PGT expansion – overview: The Faculty of Medical and Human Sciences (FMHS) is committed to educating and training the highest quality health professionals in a broad range of disciplines. The FMHS strategy has been developed to align fully with the University's new 2020 Strategic Vision. In relation to PGT, the aim is to provide outstanding postgraduate courses, career-long development opportunities and introduction of innovative teaching and learning methods. Our understanding is that a UoM-wide PGT strategy is under development.

continued opposite

Taught Masters within the Institute are primarily aimed at graduates seeking to further their knowledge in a specific area having studied at undergraduate and/or gaining a professional qualification. These programmes help to prepare students who wish to progress on to higher research degrees such as PhD and MD. The Institute currently has 9 affiliated taught postgraduate programmes offering masters, postgraduate diploma and postgraduate certificate qualifications to over 300 registered students in:

- Applied Mental Health (MSc/PGDip)
- Clinical Research (MClin Res/PGDip Clin Res/PGCert Clin Res; distance learning)
- Cognitive Brain Imaging (MSc)
- Dementia Care (APIMH) (MSc/PGDip)
- Pathway within the MSc 'Advanced Practice Interventions for Mental Health' (APIMH)
- Forensic Mental Health (MSc/PGDip)
- Primary Mental Health Care (APIMH) (MSc/PGDip) Pathway within the MSc 'Advanced Practice Interventions for Mental Health' (APIMH)
- Psychiatry (blended learning) (MSc)
- Psychosocial Interventions for Psychosis (APIMH) (MSc/PGDip) Pathway within the MSc 'Advanced Practice Interventions for Mental Health' (APIMH)

Noteworthy achievements in PGT including attracting significant funding from NHS, professional bodies and local authorities, developing new masters programmes, adapting existing programmes to make full use of state-of-the art e-learning, international conferences and innovative CPD initiatives.
To build on current achievements, most PGT programmes are now grouped into Alliance Boards and respective schools with responsibilities for the operational and performance management of their programmes. The Alliances are the principal operational and administrative units of PGT, and are the primary drivers of innovation and the evolution of existing and development of new programmes. The recently developed *Clinical Alliance* which spans three institutes is currently chaired and led by the IBBMH PGT lead and alliance administrator.

continued overleaf

Future priorities for PGT

The Institute in partnership with Alliance Boards and Schools and in accordance with the Faculty strategy have identified four priorities for PGT as part of the IBBMH strategic plan. These are improving the student experience, enhancing the quality of teaching, staff development and financial sustainability.

Improving the student experience: This will be enhanced by steps to personalise the learning experience for students and to achieve a strong sense of identity and belonging to their School and University. Programmes will need to ensure that students have an identified member of staff who will be responsible for overseeing their teaching and learning experience. There will be a commitment to delivering and closely monitoring timely and effective feedback and communication. The goal is to achieve continuing improvement in student satisfaction so that it reaches 90% by 2015. All students demonstrating an ability and interest in further research will be actively supported to seek PhD studentships, fellowship opportunities and funding.

Enhancing the quality of teaching: Particular attention will be paid to ensuring that optimal methods of delivery of teaching are incorporated in teaching programmes. The Institute will promote opportunities for eLearning and actively develop flexible high quality teaching programmes capitalising on recent initiatives to develop blended learning. This will be closely linked to the development of quality staff and peer review.

Staff development: In collaboration with the Faculty, the Institute will establish a team of the highest calibre educators through:

- In-house training.
- Showcasing innovations in teaching and learning.
- Providing peer review and where necessary mentoring for educators to develop.
- Seeking and acting upon feedback from service users and national bodies.
- Recognising and rewarding excellence in teaching and learning.
- Promoting curriculum review and development.
- Encouraging and promoting links between PGT and PGR.
- Adopting timely and efficient communication routes to keep staff up-to-date.

continued opposite

Financial sustainability: Existing PGT programmes throughout the Faculty will be reviewed to ensure they are financially sustainable and income generation will be explored. This will include:

- Development of new programmes to meet market need. Proposals for new programmes will be reviewed to ensure quality and profitability.
- Flexible delivery of existing programmes, to include access to stand-alone modules.
- Continuous practice development training and consultancy.
- Partnership arrangements with NHS Trusts, local authority providers and other health and social care providers.
- International collaborations to increase the demand from overseas students.
- Use of blended learning and e-learning initiatives to maximise uptake by new students and reduce costs of face-to-face teaching and use of facilities and resources.

A **CPD strategy** will be developed with FMHS (Vallely), which will include a financial model agreed with FMHS to ensure a high proportion of surplus returns to IBBMH as the cost centre, and a system of recognition and reward for staff.

Objective Six: Enhance world class research infrastructure and facilities

Objective Six KPIs
Consolidate imaging infrastructure and expertise, including key technical posts

The role of structural, functional and molecular brain imaging is crucial to the testing of mechanisms, experimental medicine, stratified medicine and (increasingly) measurement of outcomes in neuroscience, cognitive psychology and mental health research. In addition to high quality, high resolution imaging equipment MR structural imaging, a range of support infrastructure is needed, including dedicated support in image analysis development, MR physics, expert technical support, radiographer and radiology input and (in the case of molecular imaging/PET) radiochemistry and isotope manufacture, distribution and storage. The majority of FMHS research funded and conducted which involves imaging is located in IBBMH. Approximately 80% of the PET research activity in WMIC is now in neuroscience and mental health as is the great majority of MR. Within subject repeated measures designs with structural MR underpin a recent £1.2m MRC/NIHR EME award (Deakin) to evaluate the efficacy and mechanisms of neuroprotective agents in schizophrenia; fMR paradigms support MRC funded projects to understand the neurobiology of craving in addictions (Elliott) and brain mechanisms in neuropsychology probes for psychiatric research (Elliott); new fMR/sMR paradigms have been vital to internationally-leading work testing mechanisms in semantic memory, dementia, amnesia and aphasia (MRC– and Wellcome-funded work Lambon-Ralph, Montaldi). MRC has funded a multisite fMR validation project led from Manchester (Neurogrid: Deakin). Imaging capability in MR and PET is also crucial to existing and potential industry-funded drug discovery programmes in mood disorders and schizophrenia (eg P1 vital; Deakin), as well as pain and dementia. Although IBBMH is the focus for this externally funded neuroscience research, it also includes leading programmes in IIR, with gastroenterology (Hamdy) and dermatology (Griffiths).

Recent welcome FMHS advances have been the procurement of a 3T MR system for the WT CRF to replace the 1.5T system currently, and the funding of a SEO post (McKie) to support image analysis across FMHS. We aim to join our strategy together with that of the Centre for Imaging Sciences and look to the support of at least one further mission-critical support post. One of the fastest growth areas is fMR, where we have significant funding linked in methodological ways to imaging our emerging strengths in transcranial magnetic stimulation (TMS), advanced EEG, including concurrent EEG/fMRI, eye-tracking and novel deep brain stimulation techniques (El-Deredy, Kotz, Montaldi).These convergent methods offer powerful enhancement of fMRI and their maintenance and optimisation depends on expert technical skill.

continued opposite

A vital area to our strategy is PET imaging in WMIC. WMIC is one of only 2 active PET research centres in the UK conducting research in neuroscience and mental health, the other being at ICL. The long term importance of this technology is underscored by the MRC's recent PET Strategy for UK neuroscience; and the decision taken by UCL, Imperial and KCL to jointly fund a new system on the Hammersmith campus, expected to be online in 2016. Key clinical research areas to the IBBMH 5 year strategy are: neuroinflammation; dementia and ageing; pain; receptors and transporters in mood disorders and psychosis. Our MRC Stratified Medicine Consortium application includes new GE-developed NMDA receptor ligands between WMIC and Imperial.

Objective Seven: Engage with and contribute to evolving MAHSC strategy

Objective Seven KPIs
Contribute to MAHSC Experimental Medicine agenda

Implement and monitor mental health and clinical neuroscience innovations in care

Establish panels of healthy volunteer and patient/service user research participants

Contribute to accredited CTU establishment

The MAHSC agenda may change in translational focus with the advent of AHSNs and their late translation emphasis. It is crucial that IBBMH contributes fully to the strengthening of the Experimental Medicine agenda in FMHS/FLS. In the MRC, and MAHSC, definition of EM, it is important to note that the preclinical component of such studies is the generation and validation of a cognitive sciences model (often using functional – EEG and fMR – or molecular brain imaging), rather than a biological sciences model in general medicine. Crucial components of making sure this platform is world class in IBBMH will be better links though to WMIC with a relevant radioligand pipeline; a top flight CRF on campus with a 3T MR system; technical support for quantitative EEG, MR image analysis and PET radiochemistry, and a methodologically cutting edge CTU with world class methodologists. It will also include stronger collaboration with industry, ideally with pre-competitive alliances such as that in the P1vital consortium (www.p1vital.com; Deakin) or the EU IMI Newmeds consortium (www.newmeds-europe.com; Lewis).

The MAHSC Mental Health Domain is chaired by the CEO of Manchester Mental Health and Social Care Trust on behalf of the MAHSC Board. Clinical Leads were appointed May 2013. The Academic Lead was Professor Linda Gask until end March 2013 and the IBBMH Director (Lewis) has taken up this role. The Manchester Mental Health Programme has been established within the MAHSC partnership to deliver improved outcomes for patients across the Greater Manchester conurbation who experience a mental health problem. Although originally focused on MAHSC member organisations, it is increasingly working across a Greater Manchester footprint in line with developments towards establishment of an AHSN. The principal objectives for the domain are:

- Improving outcomes for people with mental health problems.
- Improving compliance with NICE guidance on the use of psychological and physical treatments for people with mental health problems.
- The rapid translation of the outputs from research conducted through The University of Manchester into clinical practice, and the dissemination of best practice across partners
- Developing and spreading best practice and enhanced recovery programmes for patients with a serious mental illness.
- Supporting existing clinical research programmes in recovery and rehabilitation, and improving access to and involvement of service users in research.

continued opposite

The programme currently has three major workstreams: The Manchester Dementia Partnership. Headed by Professor Alistair Burns/Professor Daniela Montaldi this project aims to harmonise dementia care across Greater Manchester and specifically to address the Prime Minister's Challenge on Dementia; Good physical healthcare outcomes for people with mental illness. Headed by Professor Bonnie Sibbald/ Professor Ruth Boaden. This project, which is part of the Greater Manchester CLAHRC aims to develop improved access to physical healthcare services for people with mental illness. Safety in mental health services. Headed by Professor Nav Kapur.

IBBMH will update a portfolio of innovations in healthcare (eg www.clintouch.com) developed with external funding and implemented in MAHSC partner Trusts.

IBBMH will work with the Citizen Scientist programme to establish and update online secure databases of potential participants in a range of priority mental health and neurology areas.

IBBMH will contribute to the development of an accredited CTU based on the current Christie unit.

Objective Eight: Recruit, support and retain outstanding individuals. Enhance the performance of current staff through mentoring and support.

See Future plans
The performance enhancement programme has commenced and detailed, objectives-led, timelocked plans will be developed for individual academic staff between the staff member, Centre Lead and ID.

Objective Nine: Engage fully with the University and Faculty Social Responsibility and Environmental Sustainability agenda.

Objective Nine KPIs
Develop and publicise major impact case studies for each of the six priority areas in order to demonstrate the impact of research (Faculty strategy priority 3a, KPi1).

Develop meaningful local targets which will include involving patients and public in the design of early phase studies.

Develop an Institute strategy relating to environmental sustainability.

Work with MAHSC to deliver socially responsible activities (Faculty strategy priority 3a, KPi2).

Through the joint MAHSC/The University of Manchester global health theme, establish externally funded and sponsored multi-professional strategic global health partnerships, with organisations in developing countries(Faculty strategy priority 3a, KPi3).

The mains aims within this objective are to;
- Develop and publicise major impact case studies across each of the Centres in order to demonstrate the impact of research – **6 months**.
- Deliver at least two health advances – **3 years.**
- Develop one international partnership – **2 years.**
- Extend public engagement – **5 years.**
- Appoint a Sustainability Enthusiast and attain Green Impact status – **1 year**

We recognise our responsibility to the public to publicise the science, the outcomes and objectives of our research. We will increase our media exposure and help to raise public awareness of our work and its relevance to society. In addition, we will disseminate news of our research to a wider range of stakeholders including grant giving bodies, government and industry and interact with special interest patients' organisations.

continued opposite

We wish to increase by 10% those of our staff involved in public engagement events and activities by 2014 **(Priority 3b KPI 1)**.

We will pursue research and educational activities related to mental health and well being.

We will increase our participation in Nowgen organised events and public health campaigns.

By 2014, our School will increase by 10% its participation in organised events with industry and other public bodies. Our School will play an active part in the Manchester Health Festival, planning and organising a broad range of activities **(Priority 3b KPI 3)**.

We will work with MAHSC/FMHS in its development of a conference series. We see these conferences as a major way to increase partnerships with industry and develop the economy in the region **(Priority 3b KPI 2)**.

The Institute strongly supports the University's environmental and sustainability campaign. Whenever possible we will encourage staff to use video or teleconferencing to replace "face-to-face" meetings. We will encourage staff to recycle waste paper, plastic bottles and batteries by placing appropriate containers in kitchens and corridors.

Involving service users/patients as participants and partners in study design, funding, management and dissemination will become increasingly a core activity. Lovell (SNMSW) has recently been awarded an NIHR Programme Grant to develop this; our coordination of the NIHR MHRN gives us access to user expertise, as does close connections with MH charities eg Rethink.

Other
Improve internal and external communications, particularly with our public research partners

Website coordinated; updated 6 monthly

Develop and implement a PPI strategy

Review and improve service user engagement in all projects

Objective Ten: Enhance and expand Undergraduate Teaching and Learning in mental health, psychology and clinical neuroscience

Objective Ten KPIs
All core staff to be contributing to UG medical teaching for 10% of time

Strengthen leadership and coordination of UGT in IBBMH

Enhance mental health/psychiatry in core UG programme, with doubling of teaching opportunities by 2014–15; engaging with students early in the programme and offering opportunities for high quality learning experience of mental health/psychiatry throughout the programme

Facilitate "extra-curricular" engagement for students in mental health/psychiatry

The first strategic priority in the Five year Strategic Plan for the Faculty of Medical and Human Sciences is **excellence in education and training** for health professionals by improving the student experience, methods of teaching, staff development and mentoring, and measurement of quality of teaching with recognition/reward of teaching excellence. Mental health has important interactions with physical and social health. Specialist mental health services have become increasingly focused on the care of people with severe and enduring mental health problems. People with mental health problems present in all specialities and mental health plays a significant part in many medical consultations. Many patients seen in non-psychiatric settings with concurrent mental health problems are managed inadequately. Recruitment into psychiatry in the North West is difficult, with relatively few Manchester graduates pursuing a career in psychiatry. There is also a need to develop a pipeline for students with a potential interest in academic psychiatry.

The current UG Medicine programme has 4 weeks dedicated to mental health in the Year 4 Mind and Movement module which also includes 4 weeks in neurology and 4 weeks in rheumatology and orthopaedics. **This is the shortest period of time devoted to mental health in any UK undergraduate programme.** It stands in contrast to the large burden of disease that mental ill health confers in the NHS, and to the fact that 35% of GP working time is spent managing mental disorders. In addition, the evidence nationally is that students enjoy psychiatry learning experiences and this affords a further way to improve on NSS scores. First exposure to mental health so late in the programme means that potential psychiatrists might already have been tempted into other specialities, and also means that students' ideas and concepts about health have developed without sufficient consideration of the mental health component. Students who are apprehensive about patients with mental health problems have a substantial period for their fears and stigma to fester.

continued opposite

Manchester Medical School is planning to allocate budget to Institutes dependent on delivery of teaching, requiring eligible institute staff contribute 10% of their time to UG teaching. The under-availability of teaching opportunities in mental health on the current course represents a financial risk to IBBMH as UGT activity becomes embedded in the budget.

Currently the input of academic psychiatrists and NHS psychiatrists with honorary appointments with the University is patchy and uncoordinated. Some staff contribute extensively, while others do not see UGT as a priority or do not consider it to be their role.

Areas of Excellence

Translational neuroscience in mood disorders and psychosis (Deakin and colleagues), using a range of investigative techniques, including structural and functional brain imaging, psychopharmacology, genetics and new approaches to phenotyping. This is one of the three strongest such groups in the UK, supported by several major MRC grants.

Forensic mental health. Professor Jenny Shaw is acknowledged to be the UK's foremost academic forensic psychiatrist and her health sciences research programme in prison health has attracted major research funding. Linked to this in CMHR is the UK's strongest suicide research group.

In **developmental behavioural sciences**, Conti-Ramsden and Lieven are international leaders in communicative development and specific language impairment (SLI) research, with Green leading on atypical social development and Hill on fetal and infancy origins of psychiatric disorders.

We have strengths in understanding **neural mechanisms of cognition** and behaviour and their neural bases, including perception, language and memory; emotion, decision making and reward; neuropsychology, neuroimaging, neurophysiology, and computational modelling.

Neuroimaging. Lambon Ralph and colleagues have used state-of-the-art anatomical exploration methods to understand the neural connectivity on the rostral portion of the anterior temporal lobe, a region hypothesised to be at the core of the semantic network, an exciting example of structural neuroanatomical insights feeding into models of higher cognition. Elliott and colleagues have pioneered pharmacoMRI with new fMR analysis methods to explore the cerebral actions of drug treatments. IBBMH is one of two centres in the UK with access to high resolution **neuro-PET** at WMIC, and this has particularly produced insights in the psychophysiology of pain (Jones), and the role of neuroinflammation in dementia and neurodegeneration (Herholz, Gerhard), attracting MRC and EU funding.

With the recruitment of Yung from Melbourne, we now have a globally leading programme in **early psychosis research** including Lewis, Marshall, Haddock, Morrison, Barrowclough and Bucci, which will strengthen the FMHS Screening and Prevention Theme. We now have one of the highest concentrations of early psychosis researchers in the world, and have many collaborative links both nationally and internationally.

Clinical trials. IBBMH leads on more externally, non-commercially-funded clinical trials in mental health than any other UK centre. We collaborate with key, world-leading academics in biostatistics (Dunn, Emsley) and health economics (Davies) in IPH who have a special interest in this area. An important part of our strategy is to lead collaborations with other UK universities. The benefit is to speed recruitment, increase sample size and enhance scientific exchange. The BeneMin study, for example, involves 11 trusts and 5 Universities.

Clinical psychology in Manchester has an international reputation in the theory-driven development and evaluation of new treatments in psychosis (Haddock, Morrison, Barrowclough), anxiety (Wells) and health behaviours (Wearden).

Dementia. Manchester first phenotyped **fronto-temporal dementia** (FTD), identified the first risk gene and also contributed to the identification of subsequent other genes, showing that FTD and MND are part of a disease spectrum.

Challenges

The **IBBMH structure** is a wholly new organisational structure that allows for new collaborations and innovative ways of working, but is unique in the Faculty, possibly in the University. It carries a risk by virtue of its dual management and reporting structure; a new workload for centre leads who retain in SPS responsibilities in the short term; and the initial unfamiliarity of Centre Leads with some of the staff they manage and some key teaching activities. Three of the four Centres are run jointly with SPS. Forming an institute with a cohesive structure in high quality space and a single overarching strategy will be a challenge, particularly as all Centres have strong individual identities and differ in size. Our SMT will be a critical hub for defining the single identity of the Institute and will be responsible for communicating of this message to all members. The ultimate aim will be to ensure all members have a clear sense of belonging. We will further develop our strategy in this context.

Growing new translational programmes of world class research. There are two priority areas where better management and targeted investment will bring about a step change. (i) In dementia, our leading research into genetics of FTD needs linking through to our research into risk factors, mechanisms using PET imaging of neuroinflammation and late translation into health and social care (Challis). This will be enabled by strategic appointments in cell biology and neuroinflammation, as well as securing our neuropathology expertise; (ii) addictions, where we have begun successfully to attract significant MRC funding and, with Millar's (group lead), salary is secured. A strong and permanent cohesion with FLS will be essential if the Institute is to achieve the objectives outlined in this document. It will require significant work from both faculties and a change in culture in order to accomplish a transformation in approach to collaboration. To this end, we have already taken significant steps to initiate this process by engaging with senior researchers in FLS (Kielty).

Insufficient MRC, EU and NIHR funding
While MRC and NIHR funding is lower than desirable, we do have major MRC grant holders (Hill, Deakin, Lewis, Green, Elliott, Millar) with at least one very large MRC grant application (EM Challenge Fund £3.5m, Deakin) under review. There is untapped potential within the Institute to obtain more MRC awards and develop a plan of progression and development in this area, ultimately to ensure MRC Centre status in at least one key strategic area. A full analysis of MRC and NIHR success rates and income within the Institute is being coordinated by the Research Deanery, which will allow SMT to set appropriate targets and monitor progress over the next 5 years. All Institutes are directly affected by the very challenging national/international funding environment. It is essential that we over the next 5 years develop initiatives to respond positively to this challenge. Building non-UK funding streams is critical: EU funding is hampered currently by rudimentary and fragmented FMHS support for assembling applications and post award administration.

The implementation of effective performance management of academic staff will take time, commitment and focus and will need to be embedded in a transparent culture of high quality benchmarked performance metrics.

The need to grow IBBMH discretionary income to allow new investment and strategic recruitment will require an increase in research income with high levels of FEC recovery; an increase in PGT and overseas PGR students with CPD programmes supported with distance learning; and an expansion of a full range of teaching opportunities in the UGT Medicine programme.

Changes in the external environment, particularly the NHS, will give rise to a range of foreseen and unforeseen challenges and opportunities in research and innovation. Horizon scanning of the research funding and clinical landscapes will be crucial.

Impact and Importance

Our suicide research group (Appleby, Kapur) is the strongest in the UK, running the National Confidential Inquiry, and has shown how its recommendations about operational changes to mental health services has led to a reduction in national suicide rates.

Our dementia clinical research group (Burns) has shown how cardiac emboli are a risk factor for Alzheimer's disease and are evaluating surgical interventions for prevention.

Drug treatments for schizophrenia were formally evaluated in a series of trials showing the relative value of new and old classes of drugs (Lewis) which received international media coverage, has produced a citation classic (330 citations in 4 years) and has led to changes in NICE guidance.

A randomised trial showed for the first time globally the effectiveness of a social cognitive intervention for children with autistic disorders (Green).

In an experimental medicine approach, for the first time in 50 years a novel and safe treatment, monocycline, for the negative symptoms of schizophrenia has been shown to be effective in a global US-funded trial led by Deakin and is being further evaluated in a UK-wide trial funded by NIHR/MRC.

In a series of high-impact publications based on international collaborative research, Abel and Webb have shown how prenatal risk factors operate to raise the risk of schizophrenia and other disorders twenty years later.

Research and meta-analysis funded by DH (Marshall) confirmed that duration of untreated psychosis in the first episode is an important predictor of clinical outcomes and contributed to the widespread introduction of early intervention services in the NHS and internationally.

A series of studies and randomised trials of psychological interventions in serious mental disorder (Haddock, Barrowclough, Morrison) has led to inclusion in 2009 NICE guidance and contributed to the national IAPT implementation programme.

Tyrell, Lambon Ralph and colleagues showed in a large scale RCT that enhanced early speech therapy intervention was on the whole not better than the normal provision, a study with international health policy implications. A groundbreaking neuroimaging study (Powell et al), attracting a lot of media coverage when it came out, showed that the volume of orbitofrontal cortex predicts the size of people's social networks.

Institute and School Centres

Staff in the Institute of Brain Behaviour and Mental Health make an important contribution to the other Schools and Institutes in the Faculty, through membership or affiliation.

As can be seen from the diagram below the principal relationship is with the School of Psychological Sciences with three Joint Centres and the leads for these Centres based in the School. All Centres were formed in September 2012 and each is described below. In addition there are collaborations outside the Faculty.

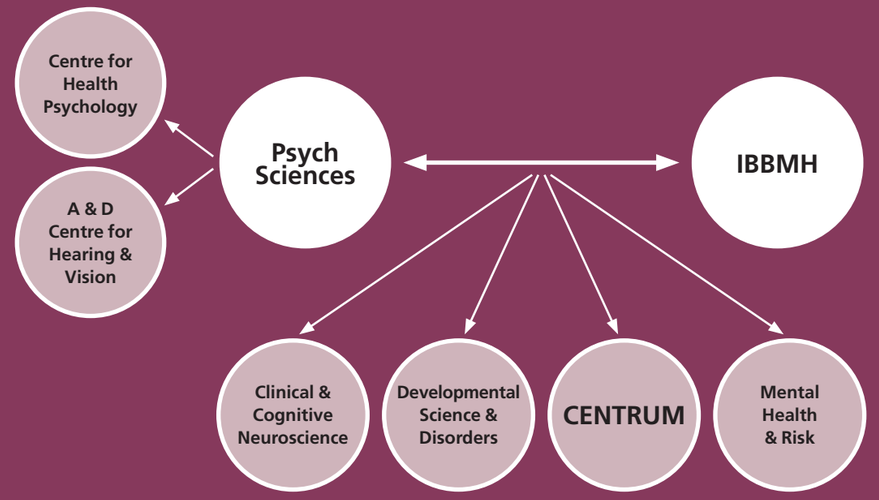


Figure 6
Key: A & D: Audiology and Deafness research group affiliate to the Centre for Hearing and Vision Research in the Institute of Human Development.

CENTRUM: Centre for New Treatments and Understanding in Mental Health.

IBBMH: Institute of Brain, Behaviour and Mental Health.


Elena Lieven

Centre for Developmental Science and Disorders

Lead
Elena Lieven

Key Collaborators/Partners
Professor Gina Conti-Ramsden (SPS)
Professor Jonathan Green
Professor Jonathan Hill
Professor Elena Lieven (SPS)

Current status overview

The Centre for Developmental Science and Disorders (CDSD) was formed in September 2012 and is led by Elena Lieven who has just returned to part-time University employment after 14 years of unpaid leave at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany.

At this time, CDSD consists of a number of currently disparate labs and interests. There were two meetings held in 2012 at which PIs presented an overview of their research, with further meetings planned for 2013/14.

Vision for the Future

The strategic priority for CDSD is to promote basic and translational research. CDSD aims to be a centre of excellence in understanding typical and atypical language, communication and behaviour development. Our crucial strengths lie in the ability to translate normative research on typically developing children into understanding the developmental pathways that give rise to atypical development in language, communicative and behaviour disorders and in the implementation of new and more informed interventions. To achieve this vision we need to:

1. strengthen CDCS to enable a larger critical mass of members to carry out investigations which have higher impact (in both typical and atypical development); and

2. build on the unique strengths of the north-west in the study of language and communicative development 0–5.

Research Highlights/ Teaching Highlights

- Longitudinal paradigms: All four key collaborators have a substantial track record in research using longitudinal studies.

- Developmental processes: As a result of these longitudinal studies, all four have been able to make major theoretical contributions to understanding the developmental pathways involved in typical and atypical outcomes for communicative development in young children.

- There is a clear coherence in the CDSD through the focus on interaction and communication in children's development.

Areas of Excellence

- **Conti-Ramsden**: Specific language impairment (SLI) research: Longitudinal study of children with SLI from childhood to early adulthood. Pragmatic language disorders (ESRC current funder).
- **Green**: Atypical social development: Controlled study of at-risk infants. Interventions with individuals at risk and their families (funding from MRC, EU, NIHR, CMFT, US and UK charities).
- **Hill**: Wirral Child Health and Development Study of fetal and infancy origins of psychiatric disorders (funded by two grants from the MRC). Integrates study of social, genetic and psychological contributions.
- **Lieven**: Studies of the language environment; Communicative and syntactic development: 1-5 (Funder: Max Planck Institute for Evolutionary Anthropology).

Chapter 8

Recent significant research findings

Conti-Ramsden: Determining the developmental trajectories of individuals with specific language impairment (SLI) from childhood to adolescence in a variety of key domains of functioning: language abilities, nonverbal skills, social relations, emotional health, and behavioural adjustment.

[Conti-Ramsden, G., St. Clair, M.C., Pickles, A.P. & Durkin, K. (In-press). 'Developmental Trajectories of Verbal and Nonverbal Skills in Individuals with a History of SLI: From Childhood to Adolescence'. Journal of Speech, Language, & Hearing Research.]

Green: Targeted parent-mediated training improves dyadic communication in pre-school children with autism, and leads to modest improvement in generalised autism symptom outcomes. [Green et al. (2010). Parent-Mediated Communication-Focused Treatment for preschool children with Autism (PACT); a randomised controlled trial. The Lancet, 375(9732), 2152-2160.]

Hill: Maternal stroking in infancy, as reported by mothers, has effects strongly resembling the effects of observed maternal behaviours in animals, pointing to future studies of the epigenetic, physiological and behavioural effects of maternal stroking. [Sharp H, Pickles A, Meaney M, Marshall K, Tibu F, & Hill, J. (2012) Frequency of Infant Stroking Reported by Mothers Moderates the Effect of Prenatal Depression on Infant Behavioural and Physiological Outcomes. PLoS ONE 7(10): e45446.]

Lieven: Developing a model that tracks the way in which children's grammars converge on the norm between two to three years of age. [Bannard, C., Lieven, E. & Tomasello,M. (2009) Modelling children's early grammatical knowledge, Proceedings of the National Academy of Sciences, 106 (41), 17284-17289]

Key Challenges for the Centre

All four PIs have well-established methods of working and strong collaborations both within and outside the University. It is important that the vision for CDSD does not interfere with or impede the on-going research excellence already achieved. Thus the focus needs to be on creating new meaningful collaborations and identifying clear translational pipelines.

Impact and Importance

- Developing scientific understanding of complex developmental systems
- Informing new and more effective intervention (evidence-based practice)
- Self-advocacy of individuals and families
- Raising public awareness

Future Developments and Key Objectives for the next 5 years

- To secure funding for a state-of-the art child research centre: to this end we have put together a statement of interest in the Jules Thorne Anniversary prize, which is currently being considered along with others.

- Plans are underway for a bid to the ESRC with Liverpool and Lancaster universities for a centre of excellence in children's language and communicative development

- To secure funding for ongoing projects (Conti-Ramsden, MRC; Hill, MRC; Green, Wellcome; Lieven, ESRC)

- To increase synergies between members of CDSD and beyond, focussing on multiple levels of funding from seed grants to Centre-level programme grants

- To develop the potentialities of joint publication with team members

- To establish collaborative education through a visiting lecturer series


Daniela Montaldi

Centre for Clinical and Cognitive Neuroscience

Lead
Daniela Montaldi
Deputy
Alex Gerhard

Senior members of CCCN
Alistair Burns (IBBMH)
Stuart Pickering Brown (IBBMH)
David Mann (IBBMH)
Anthony Jones (IBBMH)
Karl Herholz (IBBMH)
Michael Horan (IBBMH)
Daniela Montaldi (SPS)
Matt Lambon Ralph (SPS)
Wael El-deredy (SPS)

Senior affiliates include
Julie Snowden (NHS, Salford)
David Challis (Nursing/PSSRU)
John Keady (Nursing)

Key Collaborators/Partners
Members of Institute of Population Health (Imaging)
FLS
MAHSC groupings (e.g., Dementia)
Pharmaceutical companies

Current status overview

The Centre for Clinical and Cognitive Neuroscience (CCND), established in September 2012, is led by Daniela Montaldi. CCCN is composed of members from IBBMH (about one third) and SPS (about two thirds). Although areas of expertise extend across basic, cognitive, and clinical neuroscience, reflecting a real breadth of high level research, there is also real potential for a significant amount of novel and productive convergence.

Vision for the future

The strategic priority for CCCN is to further promote and strengthen our existing areas of excellence while developing new and competitive collaborations that exploit the breadth of expertise that exists in the Centre. In particular, we aim to encourage and facilitate a step increase in translational research while maintaining a clear focus on the importance of strong basic, clinical and cognitive neuroscience. CCCN intends to present itself as an ideal model of how research can translate from basic, through systems, to translational and impactful work. The focus on translational research will be broad and will span areas such as diagnosis, rehabilitation, patient treatment and care, and social policy as well as areas of social responsibility including sustainable behaviour. The focus on basic and cognitive neuroscience will span both thematic and methodological research and will ensure that we apply highly developed and optimised methodological techniques to answer critical thematic questions. In turn, this approach will maximise our translational success.

Areas of Excellence

- Fronto-temporal dementia
- Semantic dementia and semantic memory
- Episodic memory and amnesia
- The psychophysiology of pain
- Cognition and behaviour
- Neuroimaging and neurophysiological methods

Research Highlights/ Teaching Highlights

Neurodegeneration and Dementia – This is highly multidisciplinary; spanning 'molecule to care plan':

- Neurogenetics and neuropathology (Pickering-Brown, Manns)
- Neuroimaging – PET & MRI (Herholtz, Lambon-Ralph, Gerhard, Montaldi and Kotz)
- Diagnosis, cognitive deterioration and change (Burns, Snowden, Lambon Ralph, Montaldi)
- Old –age psychiatry/gerontology (Burns, Horan, Pendleton)
- Nursing, care policy and practice (Challis, Keady)

Pain research – The novelty of the Manchester vision stresses the need to feed developing knowledge of underlying mechanisms directly through to patient benefit

- Mechanisms (Jones, El-deredy)
- Neuroimaging and neurophysiology
- Placebo-based research
- Pharmacology

Mechanisms of cognition and behaviour and their neural bases – This is an area with large critical mass (around 20 members) supporting an enviable breadth of theoretical and methodological expertise. Key areas of strength include:

- Perception, language and memory
- Emotion, decision making and reward
- Neuropsychology, neuroimaging, neurophysiology, and computational modelling

Recent significant research findings (with linked references below)

- Research at Manchester helped to find the first gene for fronto-temporal dementia (FTD) and also contributed to the identification of subsequent other genes[1] including the recent finding of a repeat expansion mutation in C9orf72 being the most common genetic cause of FTD identified to date. This latter mutation is also a cause of motor neuron disease (MND) and this finding proved that FTD and MND are part of a disease spectrum[2].
- Research at Manchester has shown unparalleled levels of diagnostic accuracy[3] thus meeting the Government's Dementia Strategy objectives of good quality early diagnosis. Neuroimaging research has also highlighted the potential of FDG PET as a biomarker for early Alzheimer's disease[4].
- Manchester has been at the forefront in describing the pathology of FTD, thus helping the field harmonise its use of nomenclature for this disorder[5].
- Use of a novel direct comparison of distortion-corrected fMRI, rTMS and semantic dementia to illustrate inferolateral aspects of the anterior temporal lobe are crucial in semantic memory[6].
- High resolution MR and fMRI illustrate the selective role of the hippocampus[7], mammillary bodies and fornix[8] in recall and recollection memory; confirming a recall-specific extended hippocampal circuit
- Demonstration by a PSSRU study that intensive case management can enable older people with dementia to remain at home longer and improve the quality of care and quality of life for them and their carers[9]
- Successful decision-making requires that the uncertainty at the heart of the decision-making problem is taken into account; recent findings confirm that humans are finely tuned to exogenous uncertainty information and can exploit it to guide action[10].
- Concepts are grounded in the same neural systems that govern perception and action as modality-specific perceptual information plays a functionally constitutive role in our mental representations of objects[11].

1. Baker M, et al Mutations in progranulin cause tau-negative frontotemporal dementia linked to chromosome 17, Nature 2006, 442:916-919
2. Renton AE et al A Hexanucleotide Repeat Expansion in C9ORF72 Is the Cause of Chromosome 9p21-Linked ALS-FTD. Neuron 2011; 72: 257-68.
3. Snowden JS, Thompson JC, Stopford CL, Richardson AMT, Gerhard A, Neary D, Mann DMA. Clinical diagnosis of early-onset dementias: diagnostic accuracy and clinicopathological relationships. Brain 2011; 134: 2478-92.
4. Herholz, K (2012). Use of FDG PET as an imaging biomarker in clinical trials in Alzheimer's disease. Biomarkers in Medicine, 6(4), 431-439
5. Mackenzie IR et al. (2010) Nomenclature and nosology for neuropathologic subtypes of frontotemporal lobar degeneration: an update, Acta Neuropathol 119:1-4
6. Binney, R., Embleton, K., Jefferies, E., Parker, G. & Lambon Ralph, M (2010). The Ventral and Inferolateral Aspects of the Anterior Temporal Lobe Are Crucial in Semantic Memory: Evidence from a Novel Direct Comparison of Distortion-Corrected fMRI, rTMS, and Semantic Dementia. Cereb Cortex, 20(11), 2728-38.
7. Kafkas, A., & Montaldi, D. (2012) Familiarity and recollection produce distinct eye movement and medial temporal lobe responses when memory strength is matched. Neuropsychologia, 50 (13), 3080–3093
8. Tsivilis, D., Vann, S.D., Denby, C., Roberts, N., Mayes, A.R., Montaldi, D. & Aggleton, J.P. (2008) A disproportionate role for the fornix and mammillary bodies in recall versus recognition memory. Nature Neuroscience 11, 834 – 842
9. Clarkson, P; Abendstern, M; Sutcliffe, CL; Hughes, J; Challis, DJ. (2009). Reliability of needs assessment in the community care of older people: impact of the Single Assessment Process in England. Journal of Public Health, 4, 521-529.
10. Warren, P. A., Graf, E. W., Maloney, L. T. & Champion, R. (2012). Visual extrapolation under risk: Humans estimate and compensate for exogenous uncertainty. Proceedings of the Royal Society B – Biological Sciences, 279, 2171-2179
11. Connell, L., Lynott, D., & Dreyer, F. (2012). A functional role for modality-specific perceptual systems in conceptual representations. PLoS ONE, 7(3), e33321.

Examples of significant current funding

1. MRC programme grant: £2m (FEC) to Lambon Ralph & Parker – "Towards a unified, computationally implemented neural network for understanding semantic cognition and its disorders." March 2012 – February 2017

2. Cognitive foresight (cross council EPSRC+MRC+BBSRC) to Welbourne, Lambon Ralph & Furber: £937k (FEC)– "PDP Squared: Meaningful PDP Language Models Using Parallel Distributed Processors." September 2008 –August 2013

3. Wellcome Trust Programme Grant to Mayes, Montaldi & Parker – "Is the medial temporal lobe functionally heterogeneous for familiarity and recollection?" £627,985 [With a London component, total award approx. £1m] Oct 2011 – Oct 2016

4. EPSRC – Stewart. Centre for Sustainable Energy Use in Food Chains. (Co-investigator). £5m. 2013–2018

5. MRC Osteoarthritis: Interactions between endogenous brain opioids and the physiological and psychological responses to pain. Jones & El-deredy. £757K, 2010–2013

6. MRC Senior Research Fellowship – Stuart Pickering Brown

Teaching

All members of CCCN contribute to teaching either through contribution to the UG medical degree, the UG Psychology degree or to contributions to PG degrees including the MRes and MSc in Cognitive Brain Imaging.

Social Responsibility

Members of the CCCN are responsible for a number of activities that promote the engagement in science, for example:

- Brainstorm event 2012 BrainStorm was funded and supported by Manchester Beacon, The Neuroscience Research Institute and The Welcome Trust. See http://beamlab.lab.ls.manchester.ac.uk/news/
- Youtube PsyFile – Misconceptions in Psychology. Funded by 'Investing in Success' initiative to Karen Lander. See http://www.youtube.com/user/psyfile?feature=watch Two clips uploaded to date – over 33,000 hits
- What do Psychological Scientists do? Funded by WP The University of Manchester. Organised by Louise Connell. Members of the school communicating to audience of children aged 14+ about their work in series of short talks.
- Big Brain. Funded by The University of Manchester. Week event for children to come into university and to learn information about psychology and the brain.
- Cafe Scientific – organised by CCCN members.

In addition members of CCCN are actively involved in research exploring sustainable behaviour and are part of a group within the Sustainability Institute who are in receipt of a £5m grant.

Key Challenges for the Centre

1. CCCN is made up of 'disparate' groups that are physically spread: the potential for novel, rich and impactful collaboration is very high but the challenge lies in bringing this new community together and engaging researchers in the health, and other translational and impactful, agendas while not undermining their theoretical strengths and motivations.

2. Participant recruitment infrastructure: the success of this Centre will depend greatly on the success of patient and participant recruitment. This is a very time-consuming and sensitive process that needs to be run centrally, with uniform governance and data recording/storage.

3. The Centre's focus on basic and systems neuroscience means that it is highly dependent on rapidly developing technology, high-level and expensive equipment and technical support.

Impact and Importance

1. Short and long-term impact on treatment and care for the elderly and those with neurodegenerative disease

2. Short and long-term impact on treatment and care for pain sufferers

3. Impact on promoting and optimizing sustainable behaviour

Future Developments and Key Objectives for the next 5 years

- To expand on and draw together neurodegeneration and dementia research to ensure that we are in a very strong and unique position to bid for MRC centre status for the study of 'neurodegeneration and dementia: from molecule to care plan'.

- To increase the number of collaborative funding applications (especially to MRC and other research councils) that draw on the exceptional opportunities we have to answer key clinical and biological questions using strong cognitive, methodological and technological approaches.

- To establish a Manchester Pain Consortium where patient impact drives multi-disciplinary research drawing on a rich theoretical and methodological expertise set.

- To work towards establishing a centre of excellence in cognition and cognitive neuroscience displaying unparalleled success in integrating theoretical and translational research.

- To significantly increase the number of PhD studentships awarded to CCCN and to ensure that they reflect the Centre's key objectives.

- To strengthen our fMRI expertise from a physics/computer science perspective. This is absolutely fundamental to the objectives of this Centre. It is one of the key bridges between theoretical and translational research. A lecturer/senior lecturer appointed jointly between IBBMH/SPS would be ideal.

Chapter 8

Centre for Mental Health and Risk


Jenny Shaw

The Centre for Mental Health and Risk was formed in September 2012 and is led by Jenny Shaw, Professor of Forensic Psychiatry. The Centre comprises of staff previously based in the Centre for Suicide Prevention, MASH, Addictions and The Offender Health Research Network. Additionally we are hoping to encourage colleagues from Mental Health nursing and psychology with similar interests to be affiliated.

Vision for the Future

The strategic priority for Mental Health and Risk is to promote good quality epidemiological and health services research to improve safety for service users and services. Our crucial strengths lie in our ability to conduct large scales research projects and translate the findings into policy on patient safety. To achieve this vision we need to:

1. Develop the addictions research stream by strengthening the group and developing collaborations.

2. Develop more intervention studies across the centre.

Research and Teaching Highlights

- Large scale epidemiological studies informing services development and MH policy.
- Developed and pioneered research in the criminal justice system including conducting some of the first RCTs in this setting.
- Development of an MSC in Forensic Mental Health with regular CPD events for MH and CJS staff.

Lead
Jenny Shaw

Deputy
Navneet Kapur

Key Collaborators and Partners

Professor Jenny Shaw

Professor Louis Appleby

Professor Navneet Kapur

Dr Roger Webb

Dr Jayne Cooper

Dr Jane Senior

Dr Tim Millar

Areas of Excellence

National Confidential Inquiry into Suicide and Homicide by People with Mental Illness (Louis Appleby/Jenny Shaw/Navneet Kapur). This was established in 1996 and informs national policy and clinical practice. (Funding DH/NIHR)

Epidemiology of self-harm (Navneet Kapur/Jayne Cooper). Informing patients' management and health service provision for this group of patients. (Funding NIHR, MRC)

Large scale epidemiology studies (Roger Webb). Examining links between parental mental disorder and poor offspring outcomes.

Large scale epidemiological projects (Tim Millar) in addiction and leads MRC Addictions cluster. Funding (NIHR, MRC, Home Office, NTA)

Offender Health Research Network (OHRN – Jenny Shaw/Jane Senior) National lead centre in Criminal Justice Service(CJS) health research through key academic, clinical and policy partnerships. Conducted some of the first intervention studies in CJS. (Funding from MRC, NIHR) works regularly informs DH policy.

Recent Research Fundings

Jenny Shaw/Jane Senior
Rate of suicide in recently discharged prisoners is significantly higher than general population. Suicide in recently released prisoners: a population – based cohort study. Pratt D, Appleby L, Shaw J, Webb R, Piper M (2006). 'Lancet 2006, 368: 119-23

Navneet Kapur/Jayne Cooper
People who have a history of self-harm are more than three times as likely to die prematurely as the general population with an average number of years of life lost (i.e. premature death) of over 30 per individual. Premature death after self-harm: a multicentre cohort study. Helen Bergen, Keith Hawton, Keith Waters, Jennifer Ness, Jayne Cooper, Sarah Steeg, Navneet Kapur, 2012. Lancet 280; 1568–1574, http://dx.doi.org/10.1016/S0140-6736(12)61141-6

Kapur/Appleby
The study found that aspects of provision of mental health services can reduce suicide rates in clinical populations. David While, Harriet Bickley, Alison Roscoe, Kirsten Windfuhr, Shaiyan Rahman, Jenny Shaw, Louis Appleby, Navneet Kapur. *The Lancet, Volume 379, Issue 9820, 17–23 March 2012, 1005-1012*

Roger Webb
In a national Danish study, suicide risk was elevated amongst all men and women who had passed through the criminal justice system, not just in those individuals who committed serious offences or were imprisoned. National study of suicide in all people with a criminal justice history. Webb RT, Qin P, Stevens H, Mortensen PB, Appleby L, Shaw J. Archives of General Psychiatry 2011; 68: 591-599.

Tim Miller
The first credible and precise estimate, based on systematic application of indirect estimation methods, of the number of opiate and /or crack cocaine users in England who inject drugs (2005/06): 130,000, corresponding to 3.9 per thousand of the population aged 15 to 64 years (95% confidence interval 3.8-4.1). Capture-recapture and anchored prevalence estimation of injecting drug users in England: national and regional estimates' Hay G., Gannon M., MacDougall J., Eastwood C., Williams K., Millar T. (2009) Statistical Methods in Medical Research, 18(4), 323-339

Key Challenges for the Centre

- Succession planning particularly in psychiatry.
- Development of translational addictions research with range of disciplinary input including clinical academics.
- Development of interventions.

Impact and Importance

- Impact nationally on service development, offender health policy and national suicide prevention strategy.
- Impact on service user stigma in relation to violence and serious mental illness.

Future Objectives

Development of **translational addictions research**, led by Dr Tim Millar. The UK Research Councils have identified addiction as a strategic priority for investment and have funded four, national, MRC/ESRC Addiction Research Clusters. Dr Millar leads one of these clusters: a collaborative initiative between the Universities of Manchester, Bristol, York, St Andrews, Strathclyde, Kings London, and Cambridge. Our translational pipeline will extend from the neurobiology of addictions (Elliott, MRC project grants x 2) through to implementation of new treatments. Other UK centres in this area are Cambridge and Imperial.

Context: Addiction causes significant global harm, is a UKRC priority and intersects with Manchester's strategic priorities. Manchester's community is gravely affected by addiction harm: we have a responsibility to make a difference. Manchester does high quality addiction research, across a range of disciplines, but this activity lacks coherence and identity.

Areas for research development: We will facilitate collaborative and clinical links to build a critical mass of cross-cutting research in the areas of: screening and prevention; addiction epidemiology; recovery; and ageing, consolidating our strengths and expanding our focus.

- Secure on-going funding including NIHR but also to focus on expanding MRC and European funding.
- Continue to expand international work particularly in CJS with WHO (Shaw, Senior)
- Continue to expand CPD programme in Forensic MH and CJS staff.

Centre for New Treatments and Understanding in Mental Health (CeNTrUM)


Gillian Haddock

Lead
Gillian Haddock

Deputy
Professor Alison Yung

Current status and overview

We are one of the largest research groups in the UK and comprise a multi-disciplinary group of clinical and health psychology, neuroscience and psychiatry. We have close collaborations with Primary Care, Nursing, Health Methodology and Imaging Sciences and are research partners with NHS sites across the North West. The centre is jointly managed by the Institute of Brain Behaviour and Mental Health (IBBMH) and by the School of Psychological Sciences (SPS), plus affiliates from other schools, institutes and faculties.

Vision for the Future

Our vision is the understanding, prevention and treatment of mental health problems and the enhancement of mental health well-being. The Centre aims to create knowledge and to translate this knowledge into policy, practice, training and teaching and to be recognised as an international centre of excellence.

Key Collaborators and Partners

This work is embedded within a close collaboration with the NHS and other partners, primarily as part of MAHSC and the forthcoming Academic Health Sciences Network. This has facilitated a major programme of implementation and dissemination resulting in significant improvements and developments in prevention, services and care. We are committed to involving service users in our research and teaching and have been nationally recognised for this in the recent NIHR funded Recovery Programme (Barrowclough, Pitt). In addition, we have commendations from national bodies such as the BPS for service user involvement in teaching and have an active and integrated Community Liaison Group which contributes to the overseeing of curricula and their delivery.

An important part of our strategy is to lead collaborations with other UK universities to enhance recruitment to trials and enhance scientific exchange. Internationally, we have major collaborations. For example, our proven success in large-scale recruitment to schizophrenia studies in Pakistan is a major strength which has resulted in a highly efficient infrastructure for clinical trials in psychosis in Pakistan (Chaudhry and Husein). Our ongoing collaboration with the University of Queensland on Triple P parenting programmes (Sanders, Calam, Wittkowski) has led to significant funding and outputs.

Collaboration with industry is also important (partnerships with Astra Zeneca, Lundbeck etc) and their strategic withdrawal from CNS drug development and their shift to out-sourcing is a major opportunity. The MRC have a number of programs and calls involving industrial collaboration, which are beginning to be successful within the group.

Areas of Excellence

The Centre has expertise in a range of mental health conditions (e.g. psychosis, mood, impulse disorders), behaviours (e.g. suicide, parenting, addictions, health behaviours) and research methodologies. Areas of methodological expertise include qualitative approaches, discourse analysis, quantitative methods, trial expertise, neuroscience and neuroimaging. The strength of the Centre is that these three strands of expertise (disorders, behaviours and methods) intersect in different combinations resulting in creative environments with critical mass to explore new avenues of research. For example, the development of psychological, social, environmental and biological models to the development of new treatments or other relevant interventions to a range of psychosocial problems; the investigation of the key themes of cognition, interpersonal environments; and the integration of psychological and biological explanations to derive understanding, prevention and intervention of mental health problems, often in the form of clinical trials or population level interventions.

Planned contribution to the strategic aims and objectives of the institute

We produce high quality research that is translated into policy, practice, teaching and training. Strategies through which this is achieved include collaborations nationally and internationally, high levels of grant income, high quality publications in high impact journals, integration of the work into the NHS and other domains and facilitation of service user involvement. Specific examples of our strategy include the recent partnership with the University of Liverpool and Lancaster to form a North West consortium around preventative treatments for mental illness and partnership with the FLS around preclinical drug development including use of the new ICON Clinical Pharmacology facility on the Central Manchester site.

Current grant profile

The group has funding across a range of bodies from the basic science to implementation and translation into practice, including significant funding from research council programmes (EME, MRC developmental medicine, Wellcome, EU, NIHR RfPB, NIHR programmes etc). The group has two NIHR senior investigators (Lewis, Deakin).

Research Highlights

We have internationally recognised expertise in research in a range of areas with significant, agenda setting publications (see Appendix). Some key examples are below:

- **Mobile mental health** has attracted significant MRC and EU funding and will be developed into commercial products. For example, the Psygrid study established a national catchment of first episode psychosis cases (Lewis) and developed and validated m-health personalised approaches to ambulatory assessment and intervention for people with psychosis (www.clintouch.com). This programme extends into the new MRC Centre for e-Health Research and the MAHSC m-health ecosystem.

- **Women's Mental Health Group** (Abel) leads international collaborative studies (Karolinska; U of Columbia) of maternal effects on mental health offspring outcomes (Abel). Key research foci are prenatal maternal stress and child and adult mental health outcomes, early life stress and childhood risk of psychosis, post-term birth and later psychopathology, effect of paternal age on life expectancy and risk. fMRI and MHealth are being used to explore relationships between mothers and their offspring e.g. parental responsiveness in new mothers with schizophrenia assessed with fMRI and the development of e-resources to improve knowledge about schizophrenia and engagement with services in African Caribbean families (Abel, Edge).

- **Parenting and families** (Calam, Sanders, Wittkowski) has provided the centre with a longstanding and productive collaboration with the University of Melbourne, Australia (led by Sanders). This has allowed the widespread development of triple P parenting programmes to new and novel areas of particular importance to the North of England. For example, the MRC funded Thrive trial in collaboration with the University of Glasgow will focus parenting interventions on vulnerable women in pregnancy.

- **The development and evaluation of psychological treatments** is a key strength, for example:

The group carried out the largest ever funded trial (MRC) evaluating the effectiveness of psychological treatments for people with psychosis and substance misuse (MIDAS trial; Barrowclough, Haddock, Lewis).

The development of cognitive therapy for anxiety (Wells) and bipolar disorders (Mansell, Tai) that have influenced NHS provision and are included in NICE treatment guidelines.

- **A programme of early psychosis research** led by Lewis, Marshall, Haddock, Morrison, Barrowclough, Drake and Bucci. In 2012, they were joined by Alison Yung, from Melbourne, Australia. Prof Yung is a pioneer in the field of prodromal research. The Centre has one of the highest concentrations of early psychosis researchers in the world, and has many collaborative links both nationally and internationally. The strategy of this group is to examine ways of preventing or minimizing the personal, social and economic impact of psychosis, investigating aetiological mechanisms and ensuring that evidence is translated into policy and practice.

- The Neuroscience and Psychiatry Unit (NPU) (Deakin, Anderson, Elliot, Talbot) is a highly successful group which attracts major MRC and other grant funding, including strategic funding from industry. NPU uses experimental medicine to identify and validate potential targets for new treatments and confirm that treatments work by acting on their intended target. For example, an MRC funded study is attempting to identify psychobiological mechanisms of resilience to depression by comparing cognitive, imaging and genetic biomarkers in people who survive major life events without developing depression with biomarkers in those prone to depression. Biomarkers for these resilience processes may then be used to detect efficacy of new drugs and to validate preventative psychological treatments. Most currently funded studies in the NPU involve the experimental administration of drugs and the use of performance and fMRI biomarkers. Some studies are proof of concept studies to determine whether a single dose of a drug engages the cognitive target of interest (eg reward processing in addiction. Other work involves the experimental administration of drugs and the use of performance and functional magnetic resonance imaging (fMRI) biomarkers. Other studies aim to understand mechanisms of efficacy – for example, the group recently reported that the antibiotic minocycline is effective in early schizophrenia; now the £2m BeneMin trial is using MRI to determine whether minocycline works because it lessens loss of grey matter early in the illness.

Chapter 8

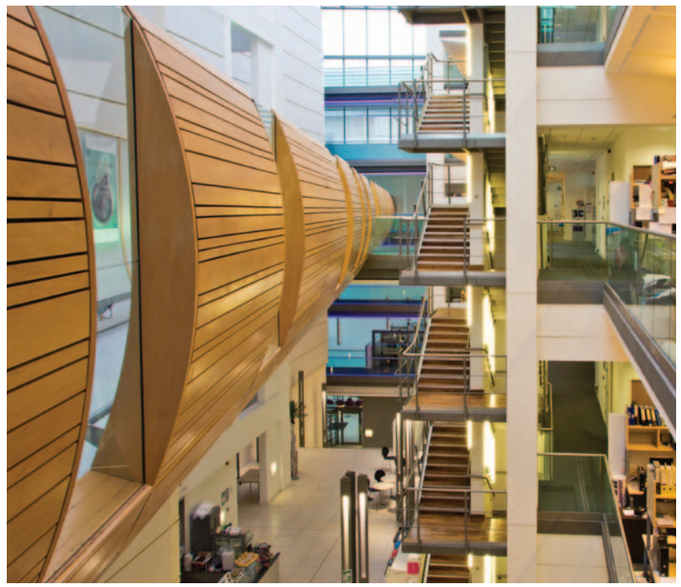
- **Developmental disorders**: This includes cross faculty work on Mucopolysaccharidosis type III (Hare) which has examined the behavioural phenotype and impact on families. This work resulted in Sheena Grant being awarded the Pat Howlin Prize. Clinical practice within services for children with disabilities has been changed in response to this work.

- **Psychological approaches to the prevention of suicide**, including development of assessment tools, psychological models of suicidal behaviour, psychotherapy interventions individuals vulnerable to suicidality (Gooding, Pratt, Awenat, Haddock) is also a growing area with close collaboration with the Centre for Mental Health and Risk.

- **The application of health psychology** to mental health (Wearden, Armitage, French, Speer, Peters, Ulph). The centre for Health Psychology within the School of Psychological Sciences is closely aligned to CeNTrUM, particularly in relation to its work on physical health and severe mental illness and addictions. The work has attracted significant funding from MRC, HTA, NIHR RfPB, ESRC and NIHR programme funding streams.

Teaching highlights.

There is considerable expertise in designing and delivering high quality undergraduate and postgraduate training including undergraduate medical and psychological education, postgraduate programmes in Clinical and Health Psychology, MSc Psychiatry and professional training in Clinical Psychology (DClinPsy). The latter has been particularly commended for its community liaison involvement and in supervision and delivering supervisor training with a post-qualification supervisor training programme which has resulted in a highly recognised textbook (Steen, Fleming). In undergraduate teaching, for psychology, there is a dedicated stream on health and wellbeing which this centre provides a considerable contribution highly rated by students.



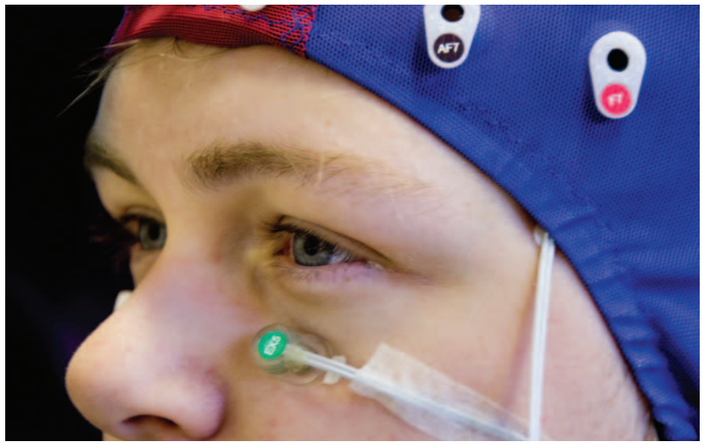
Key challenges

The group is diverse and large presenting challenges to oversight and management. A key challenge will be ensuring that the work of the group continues to develop its key areas of work and to ensure that the expertise in the group is not diminished through competition from other institutions. In addition, we need to ensure that we provide support and leadership for junior researchers to provide continued expertise within our areas of strength.

Future developments and key objectives

- To secure increased research council funding for planned projects and to consolidate our strengths across the centre members and across the faculty
- To develop and capitalise on international collaborations which contribute to our profile and quality of our outputs
- To increase the number of NIHR investigators, and funding across the spectrum (from PhD, fellowship awards) to centre-level programme grants
- To continue to target high impact, international journals with agenda setting and world leading publications
- To develop and improve the contribution of mental health teaching across the programmes within the faculty
- To foster a thriving and vibrant research and teaching community with representation from service users and the community by making our research and teaching inclusive and developing support and training for members of the community to take part in our work

Future Developments



To secure funding for a state-of-the art **child research** centre. Plans are underway for a bid to the ESRC with Liverpool and Lancaster universities for a centre of excellence in children's language and communicative development, as part of a wider collaborative initiative with the University of Liverpool.

To draw together and strengthen **neurodegeneration and dementia research and innovation**. We will establish an enhanced translational pipeline in dementia with basic and preclinical T1 research supported by MRC project grants to Pickering-Brown into the genetics of fronto-temporal dementia, through to T2 implementation in health and social care including major MRC LLHWB funding and PSSRU Centre funding (Director: Challis). A new appointment of **a chair in dementia cell biology** is in progress, to strengthen the pipeline and facilitate an MRC programme grant application by Pickering-Brown in 2013/14, with consideration of a neuroinflmmation appointment and replacement of our retiring **neuropathology chair** (Mann) in 2015 to ensure continued involvement in the MRC Brain Banking initiative. By 2016, we will be in a strong position to apply for MRC Centre status.

Development of **translational addictions research**, led by Dr Tim Millar. The UK Research Councils have identified addiction as a strategic priority for investment and have funded four, national, MRC/ESRC Addiction Research Clusters with IBBMH leading one of these. With Millar's funding brought onto baseline in 2013, we will be one of the top 3 UK centres (with ICL, Cambridge) in this RC-prioritised research area and developing a programme linked with IPH and with US NIMH and the main non-NHS UK service provider, through Millar, with an experimental medicine programme which already receives MRC support (Elliott).

To become a world leading centre in **global mental health research, education and policy**, tying into the FMHS Global Health Theme (Redmond), by building on the work of Hussein, Gater, Rahman, Choudery, Deakin and Abel through the appointment of Susser (U of Columbia NYC) as Chair in Global Mental Health 0.2 fte in 2013 to 1.0 fte in 2014. Susser holds <$100m in WHO and other strategic network funding for work in Africa, S America and S Asia.

With MAHSC/AHSN, (i) to focus increasingly on **healthcare innovations**, eg through the MAHSC m-Health Ecosystem, MRC HeRC and other frameworks, in collaboration with research funders, industry (including telecoms, software) and the NHS Confederation academic; (ii) to develop a strong mental health **Experimental Medicine portfolio**, including cognitive mechanisms and treatments; (iii) support establishment of a leading NIHR accredited **Clinical Trials Unit** in 2013–14 with participation in the MRC NW Clinical Trials Hub; (iv) build on PPI work in research and education, including as a priority through 2013 **databases of patients/service users** and healthy volunteers in key areas, linked to the important PPI work in NowGen and the NIHR Programme Grant of Lovell.

To continue to build and support world leading **brain imaging and analysis** platforms with appropriate infrastructure, including extending the molecular imaging opportunities in WMIC to other disease areas such as psychosis and mood disorders, with the establishment of a Manchester Pain Consortium where patient impact drives multi-disciplinary research drawing on a rich theoretical and methodological expertise set (Jones, El-Deredy).

To establish a **neuroscience and mental health animal facility** to support new translational and back-translational research in developmental disorders (Hill), psychosis (with new appointment to School of Pharmacy, Neill).

Financial Resources

The Institute's budget for the financial year 1st August 2012 to 31st July 2013 is as follows:

INCOME	£m
HEFCE income	1.5
Tuition Fees	4.9
Research Income	6.2
Endowment Income	0
Other Income	1.2
Investment Income	0
TOTAL	**13.8**

EXPENDITURE	£m
Pay Costs	6.6
Non Pay Costs	2.2
Depreciation	0
Interest Payable	0
TOTAL	**8.8**

NET CONTRIBUTION AFTER ENDOWMENT ADJUSTMENT	5.2

Outputs in Journals IF>8 where IBBMH core staff first or senior author:

(Impact factors: Molecular Psychiatry 13.6. Archives of General Psychiatry 12.3. American J Psychiatry 12.5. Biological Psychiatry 9.3. Neuropsychopharmacology 8.0)

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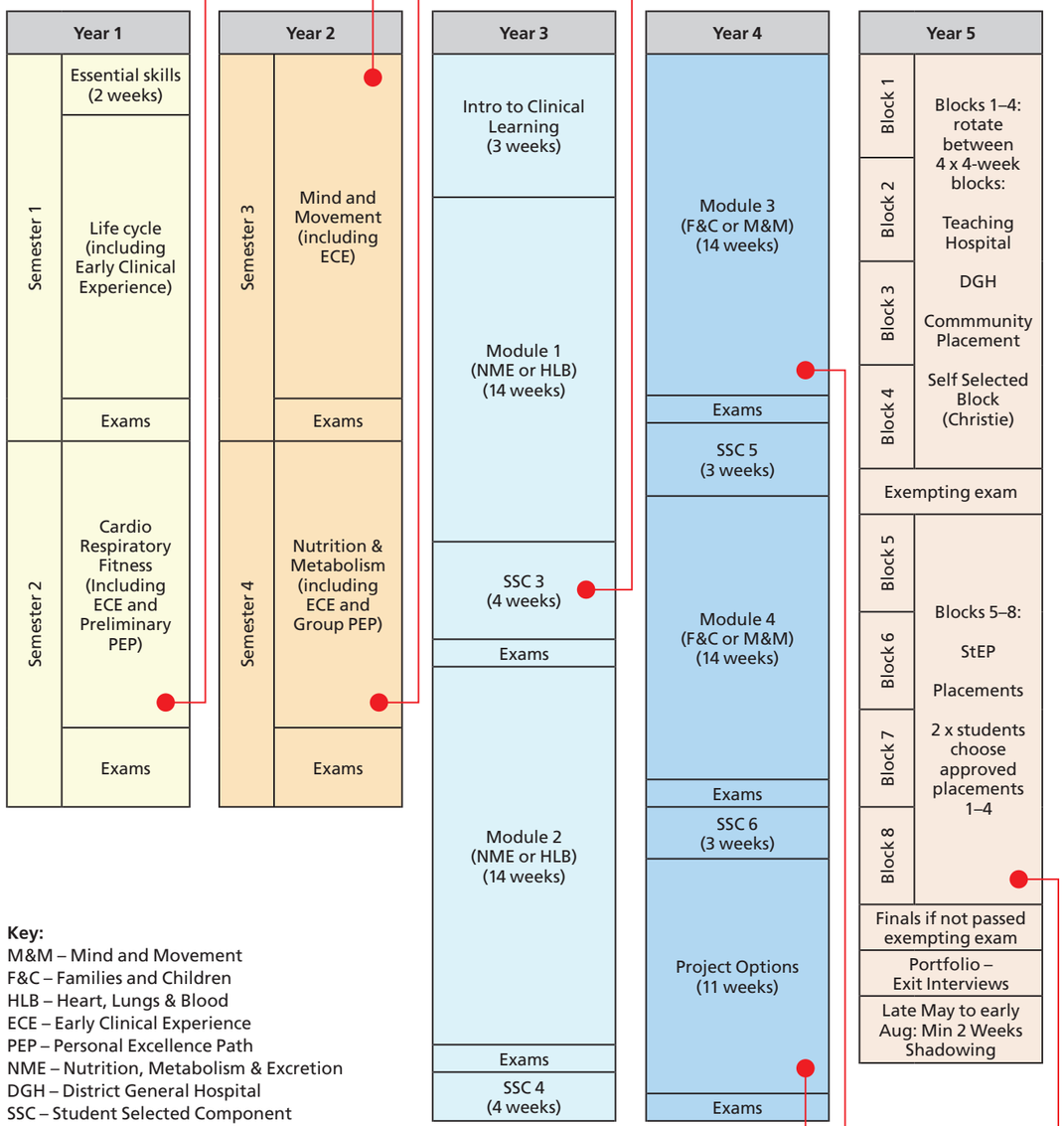
Appendix 3

Opportunities for Mental Health/Psychiatry to contribute to existing UG Programme



Key:
M&M – Mind and Movement
F&C – Families and Children
HLB – Heart, Lungs & Blood
ECE – Early Clinical Experience
PEP – Personal Excellence Path
NME – Nutrition, Metabolism & Excretion
DGH – District General Hospital
SSC – Student Selected Component

Key Collaborators and Partners

Preliminary PEPs
The Personal Excellence Path (PEP) is an integrated series of student selected educational modules The Preliminary PEP is a 10-15 page report involving literature searching skills, scientific writing skills to enable production of a comprehensive literature review, interpretation and analysis of scientific literature, and the student learns to explore in depth a scientific topic of interest to the student.

Mind and Movement – Year 2, semester 1
Semester 3 is about neuroscience. The 10 PBL cases are: Neural tube defect ; Back and leg pain; Squint; Deafness; Cerebro-vascular accident; Multiple sclerosis; Parkinson's disease; Alcohol abuse; Tibial stress fracture and torn cruciate ligament; Head injury. The vast majority of ILOs relate to neurology.

Group PEPs – Year 2, semester 2
PBL group prepare a poster on a specific theme with aspects on basic medical and clinical sciences, behavioural and social sciences, and evidence based medicine.

Phase 2 SSCs (4 weeks in Year 3; 3 weeks in Year 4)
The SSCs allow students to extend their education in depth & breadth from personally defined objectives. They involve critical appraisal of published research and understanding of research methodology, and relate in depth knowledge and skills to a specific medical issue or problem relating to a patient, a patient group, a family, a community or health care service. The current SSC and project options within Phase 2 will, for students entering Phase 1 in 2012/13, be revised and incorporated within the new PEP pathway.

Mind and Movement – Year 4
14 week module including 4 weeks in mental health placement with 4 PBL cases: 1. Dementia, 2. Affective disorders, 3. Psychosis, 4. Alcohol and substance misuse

Project Option – Year 4
The Project Option is an 11 week student selected component in Year 4 and runs between May and July. Of this 11 week period, the first 10 weeks are for students to work on their chosen projects and the final week for presentations and assessments. Students have a choice of undertaking either a Research project or a Non-research or a Audit for 10 weeks.

Student Assistantships – Year 5
For students not on a StEP (elective) placement, one of the 4-week blocks they must do is a student assistantship (SA), which is a rehearsal for being an FY1 doctor. Should reflect the range of experiences an FY1 doctor will have. Could be achieved jointly with another specialty – old age psychiatry + geriatric medicine.

IBBMH: UGT Action Plan 2012–13

Action	Responsibility	KPI	Target	Timeline MM/YY
1. Strengthen leadership and coordination of UGT in IBBMH				
Establish IBBMH **UGT management group** (UGT-MG)	SMT & Richard Gater	Membership & ToR agreed (Y/N)	Y	12/12
Coordinate a **directory** of mental health/ psychiatry UG teaching opportunities	Richard Gater	Directory exists (Y/N)	Y	1/13
Establish and maintain a reliable **database of IBBMH staff** contribution to UGT	Richard Gater	Database exists and validated (Y/N)	Y	2/13
Arrange a **Teaching Away Half-Day** early in 2013	UGT-MG	Teaching Away Half-Day held (Y/N)	Y	4/13
2. Ensure that IBBMH teaching staff meet MMS 10% of time standard				
Annual appraisal of IBBMH staff with teaching component includes appraisal of teaching with 10% target	University appraisers	Percentage of eligible IBBMH staff with teaching component present in PDP	100%	12/13
Sufficient UG teaching opportunities available to meet MMS 10% standard	UGT-MG	Ratio of IBBMH related teaching opportunities tariff to 10% of eligible IBBMH staff time	Ratio	3/13
Ensure all substantive and honorary IBBMH staff are **aware** of all teaching opportunities	Richard Gater	User-friendly directory of relevant UG teaching opportunities, with timely prompts circulated (Y/N)	Y	1/13
All IBBMH teaching staff complete **TOPCAT** (or whatever system used by MMS to measure teaching contribution)	IBBMH teaching staff	Percentage of eligible IBBMH staff with complete TOPCAT by census date	100%	6/13
3. Enhance mental health/psychiatry in core UG programme				
Phase 1: Increase the presence of mental health in PBL cases in Mind and Movement in semester 3 (offer mental health clinician input into PBL supervision to support these aspects being addressed in PBL)	Peter Talbot (& Richard Gater)	3) rewritten/new PBL cases using mental health problems for neuroscience ILOs	(3)	8/13
Phase 2: Increase in mental health/psychiatry in Phase 2; revisit previous proposals to extend mental health in Phase 2.	Richard Gater	Step-change to be specified after meeting with Phase 2 Lead & HUME	TBC	8/14
Phase 3: Explore developing student assistantships with psychiatry component	UGT-MG	To be specified after meeting with Phase 2 Lead & HUME	TBC	8/13

IBBMH: UGT Action Plan 2012–13 *(continued)*

Action	Responsibility	KPI	Target	Timeline MM/YY
4. Strengthen mental health/psychiatry input into existing UG programme – engaging with students early in the programme and offering opportunities for high quality learning experience of mental health/psychiatry throughout the programme				
Maximise number of mental health/ psychiatry opportunities in the **Year 1 PEPs**	IBBMH teaching staff	Percentage of eligible IBBMH staff offering at least 4 Preliminary PEPs	100%	11/13
Establish IBBMH engagement with **Phase 2 PEPs**	Peter Talbot & Richard Gater	2 IBBMH examiners for Phase 2 PEPs (Y/N)	2	5/13
Maximise number of **Project Options** supervised by IBBMH staff: a) Maximise number of mental health/ psychiatry PO opportunities b) Promote/advertise mental health/ psychiatry POs c) Establish a system to coordinate students seeking PO supervisors being directed to appropriate supervisors (University then NHS)	UGT-MT & IBBMH teaching staff	Percentage of eligible IBBMH staff offering PO supervision Ratio of PO supervised by IBBMH staff to eligible IBBMH staff	100% 0.7	11/13
Establish and run a system to **monitor and improve** teaching performance (e.g. peer review) consistent with Faculty & MMS	UGT-MG	Systems in place to monitor and improve teaching performance (Y/N)	Y	8/15
5. Maximise IBBMH input into UG programme in areas that do not involve direct mental health/psychiatry teaching				
IBBMH staff engaged as **Academic Advisors**	IBBMH clinical teaching staff	Percentage of eligible IBBMH staff that are Academic Advisors	100%	6/13
IBBMH staff engaged in **Recruitment**	IBBMH teaching staff	Percentage of eligible IBBMH staff that are involved in recruitment	TBC	7/13
IBBMH staff engaged in **Assessment** (e.g. OSCE examiner, assessment committee)	IBBMH clinical teaching staff	Percentage of eligible IBBMH staff that are involved in assessment	TBC	12/13
6. Facilitate "extra-curricular" engagement for students in mental health/psychiatry				
Establish a mental health seminar series (6 seminars for Year 2)	UGT-MG	Seminar series scheduled (Y/N)	Y	8/13
Support the Psychiatry Club	UGT-MG & all			
Establish a Journal Club in Psychological and Related Sciences	Kathryn Abel	Journal Club series scheduled (Y/N)	Y	8/13
Collaborate with the NW Division of Royal College of Psychiatrists Recruitment Sub-Committee	UGT-MG & all	Academic staff participating in Recruitment Sub-Committee activities	Y	12/13

The University of Manchester
Oxford Road
Manchester
M13 9PL

tel +44 (0)161 306 6000
www.manchester.ac.uk

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