University of Manchester Research Institute (UMRI) Pump Priming Programme

Funded Proposals (2012)

Strengthening the Capacity for Archaeological Science at Manchester
Funding to support initiatives which will secure funding streams to support the costs of establishing and running a Centre for Archaeological Science.

Towards a rational design of formulation screens using peptide-based inhibitors of non-specific protein self association
Funding to meet the immediate need for novel approaches to stabilizing protein solutions for the next generation of therapeutics. The main aim of this work is to develop a toolkit based on rational design of small peptides as stabilization agents to be used in protein formulations.

Building Interdiscipliniarity in Attitude Research
Funding to foster interdisciplinary engagement, debate and research on attitudes which will also trial a new approach to building interdiscipliniarity whilst doing research. By connecting and building interdisciplinary capacity the feasibility of bidding for an Attitudes research centre will be assessed.

Establishing the University of Manchester Campus as a Living Lab for Sustainability
Funding to develop the UoM campus as a living lab for energy and sustainability research

Design for Wellbeing: Ageing and Mobility in the Built Environment
Funding to bring together and build a strong, multi-disciplinary research team to lay the foundations for developing a large grant application in the area of "Design for Wellbeing". Ultimately, the research vision is to investigate design interventions for ageing, mobility and wellbeing that radically integrate the influences of city-wide processes on neighbourhood, street and home environments.

Automated breast cancer screening:
Funding for an interdisciplinary pilot study bringing together chemical imaging, cancer pathology and machine learning to produce a next generation healthcare technology.

BECKI: Building an online Bio-health Expertise Community: enhancing Knowledge exchange to promote Interdisciplinary Research
Funding to develop a web-based descriptive 'map' of bio-health researchers with computational/informatics expertise within the University. The aim is to help researchers enhance the quality and impact of their research by sign-posting them to potential interdisciplinary collaborators with analytical skills matching their project requirements.

Multidisciplinary Approach to Pleistocene Bone Taphonomy on Cayman Brac
Funding to support an interdisciplinary research team from Palaeontology (SEAES), Materials Science, MACE and the Faculty of Life Sciences to travel and to collect samples from a recently discovered Pleistoceneage (~120,000 year old) vertebrate assemblage from a cave deposit on Cayman Brac. The fossil material will immediately open up novel areas of research.

Multi-functional aptamer nano-biosensors: self-assembling peptidyl-oligonucleotide hydrogels for potential application in diagnostics and biomedicine

Funding to obtain proof-of-principle data towards the design and fabrication of novel DNA-aptamer based nano-biosensors using self-assembling peptidyloligonucleotide conjugates for the detection of (i) genetic abnormalities (at DNA level) as well as (ii) gene-expression profiling (at mRNA level) for potential application in molecular diagnostics and biomedicine.

Fostering Interdisciplinary Research building upon synergies in Water-Food-Energy

Funding to build momentum around the water@manchester and food@manchester communities towards developing interdisciplinary research proposals that can take a more systemic approach to addressing today's grand challenges.

Interdisciplinary Collaboration on Graphene Research and Innovation Systems

Funding to support a new interdisciplinary collaboration between the Manchester Institute of Innovation Research and the National Graphene Institute to explore research and practice interests related to graphene research and innovation.

Joint Industry Funding Workshops

Funding to identify, in collaboration with industry, a number of new areas for Joint Industry Funding (JIF) projects that lead to successful proposals for research in the area of nuclear science and engineering.

Disproportionality in the Professions: Working together to understand and respond to discrimination and prejudice

Funding to synthesise existing evidence on disproportionality research and regulatory activity and outcomes in at least five professions (medicine, law, pharmacy, policing and higher education) to help identify gaps in knowledge and establish similarities and differences in employment practices and approaches to regulation.

Exploring Issues in Semantics at the Intersection of Linguistics and Philosophy

Funding to prepare a major grant application for an externally funded project as the first step towards establishing a long term goal of establishing a Research Centre for interdisciplinary research in semantics

Exploiting New Opportunities in mHealth

Funding to connect with a wider range of research staff and bring them into the developing mHealth community in the University and to develop new areas of mHealth research, publicise the University's mHealth research externally and exploit the range of funding opportunities in mHealth, nationally and internationally.

Development of the Raman Spectroscopy Facilities in the University of Manchester

Funding to develop a world-class Raman spectroscopy facility and bring together users in the University to promote cross-fertilization of approaches in materials science, physics, chemistry, biology, medicine and engineering as well as to enhance efficiency of use through sharing of resources.

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Building a University of Manchester Research Community in "Big Data" (including Open Data and Linked Data)
Funding to exploit the highly innovative and diverse research across a wide range of disciplinesto build a Big Data community within the University to support the development of competitive bids by Manchester to generate new research and, drawing on Manchester's existing engagement with key commercial and public sector stakeholders, to develop strategic links with leading international data owners and service providers in Big Data.

Synergising proteomics and metabolomics at The University of Manchester
Funding to bring together groups to begin to form a cohesive, unified strategy to underpin next generation challenges in systems health.

Establishing the Greater Manchester Neurodegeneration and Dementia Partnership (GMND-- - P)
Funding to set up a management and support framework for neurodegeneration and dementia research and impact across Greater Manchester and create a GMND-P website.

Autism@Manchester: a proposal to establish an interdisciplinary research group to further our understanding of autism
Funding to establish Manchester as a major UK & International Centre of autism research. The group will stimulate collaborative research and create an environment that is more attractive to funders, enabling the University to be among the leading institutions for autism research.

Food Fraud: Supply Network Integrated Systems Analysis (SuNISA)
Funding to develop an international food fraud network to enhance existing Manchester-based collaboration to develop a computational model of risk of fraudulent adulteration in the food supply chain.

Inter-disciplinary Demand forecasting for Energy and Water (InterDEW)
Funding to engage researchers within the University, potential academic collaborators and other relevant stakeholders to define a research agenda to better understand and explore how change in demand for water and energy can be projected, and identify the University's unique contribution to this growing field of interest.

Manchester Sensors for Healthcare Initiative: An interdisciplinary network for the development of new sensing technologies for healthcare applications
Funding to develop a network which coordinates the most promising research directions in Manchester but which, crucially, reaches out to complementary research within the UK and to top level research globally. The network would be charged with the task of identifying national and international collaborations and driving those collaborations towards well funded projects.

Using Text Mining to Identify Interdisciplinary Links in eScholar
Funding to automating the process of discovering possible commonalities in previously reported research at the University through the application of advanced text mining techniques developed by NaCTeM to articles indexed within eScholar.

Building Interdisciplinary Research in Inflammation in Schizophrenia and Early Psychosis (RISE)
Funding to develop a research network with the aim of developing an extensive knowledge base in a research area that is gaining interest from funding bodies. The ultimate aim of the network will be the development of a strong funding profile, through submissions of grant applications, engagement with industry and strategic external collaborations.

Women in Science: Characterising and Understanding the Gendered Nature of Scientific Leadership
Funding to examine how women become successful leaders in science. Using the University of Manchester examples of successful female academic leaders in the university will be identified and their career path into leadership, their leadership experiences and the nature of their leadership style will be explored to seek to understand how the particular organisational setting they find themselves in shapes their experience of leadership.

Time to Join Forces: An Interdisciplinary Approach to Fighting Stigma
Funding for a series of seminars to raise awareness of stigma and its consequences; gain patient and public involvement in understanding and challenging stigma; and, develop a collaborative research network that will seek major external funding.

Fostering a Manchester-based, interdisciplinary research programme on mobile technologies for young people with long term conditions to promote optimum disease management
Funding to develop a new, national, Manchester-based, interdisciplinary research programme on mobile technologies for young people with long term conditions to help promote their optimum disease management. Activities funded by the proposed project would release new synergies between existing clusters of local and national, interdisciplinary expertise in research and technology development, consumer experience and clinical expertise, and will be supported by the Manchester mHealth Ecosystem and Manchester Informatics.

Interdisciplinary research in Economics of Ageing
Funding to support novel collaborative research in Economics of Ageing leading to a new cross Faculty grant application to the ESRC, facilitate the building of networks, to explore an application for EU funding under Horizon 2020.

Manchester Energy Interdisciplinary PGR Summer School
Funding to hold an energy summer school for up to forty PGR students from across the university, who are engaged in energy related research. It will provide a unique opportunity for the students to gain an awareness of the latest research and principal issues in the key research areas of energy including nuclear, solar, bioenergy, wind power, and demand-side considerations, being addressed within The University of Manchester.

Biomolecular Analysis and the Parchment Heritage
Funding to build capacity for an external bid within the area of manuscript studies and take forward and develop Manchester's particular contribution to this area with a particular focus drives on the holdings in the John Rylands Library and specifically our parchment books.

Visualising and optimising very large scale protein sequence-activity data for synthetic biology
Funding to utilise the Utopia architecture created in Manchester to bring together computer scientists, biologists and chemists to exploit e-science for synthetic biology with the aim of developing code that will allow the team to do three of the crucial steops of synthic biology-based directed evolution.

Interdisciplinary action on gas sensing with light
Funding to bring together the current isolated activities in this field to gain a more integrated approach to the funding of these activities. This will be achieved under the guidance of the existing relevant Manchester initiatives (food@manchester, energy@manchester, water@manchester and policy@manchester) to achieve a much more coherent approach to addressing society's grand challenges for those involved in this field.

Sustaining Food@Manchester
Funding to to maintain the Food@Manchester capacity and the ongoing development of the network.

Establishing an Interdisciplinary Research Structure: The Socially Responsible Outsourcing Unit
Funding to set up a Socially Responsible Outsourcing Unit (SRO) to establish Manchester as an international centre of expertise in the area. This will build on previous and current ongoing research in this area by group members from MBS and SEED, and widen links to other related stakeholders in academia and industry. The proposed Socially Responsible Outsourcing Unit will be a focal point for joint research projects and bidding activity.

The Faculty of Humanities' Special Seminar Series on the Multidisciplinary Impact Evaluation of International Development
Funding to organise a series of seminars and a one day workshop on the multidisciplinary impact evaluation of international development policies by inviting world-leading researchers in the field. These will provide opportunities for researchers to network with those distinguished researchers and take up advanced knowledge and skills necessary for the impact evaluations. The project will enable the preparation of a large ESRC research centre with those overseas researchers.

Interdisciplinary Centre for Ancient Life (ICAL)
Funding to help establish and develop an innovative, self-sustaining, interdisciplinary research centre. The centre will bring together researchers from across faculties to create a critical mass of researchers giving Manchester an unrivalled position for the strength of its research in palaeontology and evolutionary biology. The centre would foster collaborations across the physical, engineering, material, medical and biological sciences to produce high-quality research and knowledge transfer.

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Building Links Between the University of Manchester and the BBC
Funding to support a large-scale, cross-faculty industrial networking activity under the new University of Manchester Institute of Data Sciences. It will discover and foster interdisciplinary data science research partnerships between academics from a wide cross-section of disciplines at the University of Manchester (UoM), and a number of BBC initiatives, including User Experience, News Labs and My BBC.

Making Manchester Biomaterials Count
Funding to support an initiative, led by the School of Materials to develop a virtual centre for biomaterials activities with the aim of bringing focus to the breadth and depth of Biomaterials research in Manchester. The project aims to federate the Biomaterials activities across the University to increase visibility and reach, which is particularly important for the preparation of large multidisciplinary grant bids such as EU bids.

An Interdisciplinary Centre for Petroleum Geoscience and Engineering
Funding to foster and develop interdisciplinary research activities that will lead to larger, ambitious research proposals to RCUK, EU and industrial sponsors. The Centre will capitalize on the extensive existing sub-surface reservoir focussed geoscience and engineering research within SEAES, CEAS and Materials School and the University of Manchester's ability to offer critical mass, capabilities and world-class facilities. The Centre will facilitate new funding strategies, showcase, sustain and promote research and capitalize upon the knowledge resources that an integrative group derives.

Reproductive Medicine and the Family in Ethics, History, Law and Society: Building Interdisciplinary Synergy
Funding to combine historical, legal, ethical and sociological perspectives to explore the potential for interdisciplinary research on reproductive science, creating new interdisciplinary synergies between research centres at the University with existing expertise in research on reproductive technologies and their effects. This will be done through a programme of activities including a seminar, a conference, the development of a major grant application and multi-disciplinary research-led teaching.

Manchester Energy Interdisciplinary PGR Summer School
Funding to allow the staging of a Manchester Energy Summer School for up to forty PGR students from across the university, who are engaged in energy related research. It will provide a unique opportunity for the students to gain an awareness of the latest research and principal issues in the key research areas of energy including nuclear, solar, bioenergy, wind power, and demand-side considerations, being addressed within The University of Manchester.

"Undercover Agents" – Science and Humanities join forces to uncover hidden text in manuscripts and early printed books
Funding to consolidate work to date, and to apply a wider range of techniques and expertise to uncover hidden information in important historical artefacts. This is a great opportunity to use expertise from across all faculties in the University and thus form a truly multi-disciplinary team that will take this research to

the next level and make Manchester the leading centre in the UK for applying physical sciences techniques to ancient artefacts.

Employee gentleness in palliative care
Funding to to develop a better theoretical account of employee gentleness, and to develop a more in-depth understanding of the distinct behaviours used by employees when being gentle, the individual and contextual factors that promote and constrain gentleness, how patients and carers experience employee gentleness, and the conditions in which gentleness might be problematic.

The quantitative comparison of the Zebrafish as a model of human development in relation to paediatric medicine
Funding to to develop a better defined and easy to handle model of human development that will facilitate the study of paediatric pharmacogenomics. The project will test whether Zebrafish is an appropriate model for paediatric development at different stages and whether Zebrafish development has similarities and differences within its transcriptome that can be related quantitatively to human development. This quantitative assessment can be made using “transcriptome age index” and by “network connectivity”.

Harnessing Large-Area Surface Nanofabrication for Cellular Engineering and Regenerative Medicine
Funding to harness the University scanning probe nanolithography facility towards applications in cell biology and tissue engineering, by establishing a logistical and scientific network of researchers with interests in these areas.

Discovering pathophysiological mechanisms behind frailty with genome-wide association and network analyses in two cohorts
Funding to conduct a genome-wide association study of 2.5 million genetic markers in a discovery cohort, then secondly attempt to replicate the results in a second cohort. The discovery cohort is the Health and Retirement Study in the United States with 12,500 individuals; the replication cohort is the English Longitudinal Study of Ageing in the United Kingdom with 5,300 participants. These two cohorts have identical phenotypic and genotypic data and will be used to build the most comprehensive model for frailty. This approach will allow the location of genes with associated genetic markers in relation to a hierarchy of biological pathways with the aim of obtaining evidence for the involvement of inflammatory and steroid hormone biosynthesis pathways and the identification of new pathways because frailty is thought to be a disorder of several inter-related physiological systems.

Technological solutions to support behaviour change to deliver best practice among healthcare professionals
Funding to create a network of researchers working in practice-based evidence, evidence-based practice and in developing technological solutions to support healthcare professional behaviour change. The project will aim to synthesise the existing cross-disciplinary research on successful behaviour change interventions (whether practice-based or evidence-based) that use technological supports for any patient-facing healthcare professionals (such as doctors, pharmacists and nurses) and to conduct a series of three collaborative and cross-faculty networking events which will bring together the relevant expertise from within the University in key thematic areas, and which will create an network of interested parties.

Global Production and Local Outcomes: Challenges for Governance. Interdisciplinary Research Network and Policy Workshop

Funding to bring together leading international and UK scholars working on global production networks and global value chains across different disciplines, and using distinct frameworks of GVCs (international development); GPNs (economic geography) and 'global factories' (international business), along with key policy actors in leading international institutions (ILO, UNCTAD, WTO, World Bank and Inter-American Development Bank) to debate the emerging policy agenda in a major, two-day, international research and policy workshop.

Creating Critical Mass in New Technologies for Mobility and Motion Monitoring for Healthcare

Funding to form a multidisciplinary network based in the North-West of England, led by The University of Manchester to develop and calibrate novel emerging technologies for remote and cost effective monitoring of human movement

Realising Rapid Healing of Next Generation Biodegradable Coronary Scaffold by Advanced Laser Surface Micro/Nano Engineering

Funding to support a project, in collaboration with the interventional cardiologists in Manchester Royal Infirmary, to apply the laser surface engineering technology to the new generation biodegradable stents with the aim of creating micro/nano textures on stents which will be accompanied with simultaneous surface chemistry changes in order to improve endothelialisation and reduce stenting-associated complications.

The Cryosphere Research at Manchester (CRAM) group development and interdisciplinary research bid initiative

Funding to improve the interdisciplinary links and collaborations of the Cryosphere Research At Manchester (CRAM) group with the aim to develop future research bids on themes around the topic of past, present and future glaciation extents in Greenland.