THE LINCOLN INSTITUTE OF HEALTH

Background

The Chair in the Care of the Older Person will be part of the new Lincoln Institute of Health, a cross disciplinary research collaboration linking schools, colleges and external partners to investigate key issues of concern of health, social care and wellbeing using a ‘cell to community’ approach. The Chair may also be a member of an Academic School associated with the Institute, depending on disciplinary interests.

The LIH conducts international and world-class studies encompassing the whole research pathway from ‘cell-to-community’, developing innovative health and social care technologies, treatments and improving systems and processes. The LIH works in partnership with health, social care and third sector services in Lincolnshire, regionally and nationally, as well as with academic partners and policy groups in the UK and abroad.

Fundamental to the strategy and culture of the LIH are its underpinning principles that research: responds to key priorities in health (e.g. cancer, cardiovascular disease, obesity, infection, long-term illness, prescribing, healthy aging and wellbeing, organisation of health systems including integration of health and social); is co-created and conducted in partnership with key stakeholders (service users, health practitioners, health, social care and third sector organisations, industry and policy makers) in a way that is responsive to their needs; and, in doing so, increases the likelihood of research being implemented and leading to uptake and impact. This approach ensures we conduct timely high quality studies and design, implement and evaluate innovative health technologies in national and international priority areas and shape the research agendas and directions of key stakeholders.

The LIH currently includes research groups from the Colleges of Science and Social Science, including the following groups and centres: Molecular Basis of Disease (MBoD) Research Group, Drug Design and Delivery (DDaD) Research Group, Lincoln Social Computing Research Centre (LISC) and the Laboratory of Vision Engineering (LoVE) within the College of Science; and the Community and Health Research Unit (CaHRU), Health Advancement Research Team (HART), Perception Action and Cognition (PAC) Research Group and Policy Studies Research Centre (PSRC) in in the College of Social Science.

Key areas of expertise include medical and molecular genetics, molecular oncology, analytics of biological systems, infection and immunity, clinical pathology, drug design and molecular pharmaceutics, human-computer interactions, imaging and related therapies, movement and its disorders, quality and outcomes in primary health care, pre-hospital and emergency quality and outcomes, older people and well-being, social exclusion, health promotion, exercise and physical activity, and epidemiology including statistical analysis of ‘big data’.

External partners include the National Institute for Health Research, the East Midlands Academic Health Science Network and Collaboration for Leadership in Health Research and Care, United Lincolnshire Hospitals, Lincolnshire Community Health Services, Lincolnshire Partnership Foundation and East Midlands Ambulance Services NHS Trusts as well as academic institutions in the region (Universities of Nottingham, Sheffield, Leicester, De Montfort, Leeds Metropolitan), UK (e.g.
University of Cambridge), and worldwide (Netherlands Institute for Health Services Research [NIVEL], University of Ghent, Harvard University).

Our overarching aim is to understand and translate the fundamental molecular, cellular, behavioural, organisational and societal mechanisms that affect health and cause disease, to develop and deliver diagnostic tools and therapeutic treatments to improve human health, and to improve the practical delivery of health and social care to make positive changes to people’s health and wellbeing. The LIH focuses on fundamental science, personalised therapy and translational research.

**Looking Ahead**

Our key objectives over the next five years include:

- to build on our internationally recognised, multidisciplinary research developing innovative health and social care technologies, treatments and organisational interventions;
- to undertake research that examines and improves the performance and functioning of health and social care practice, organisation and delivery, with a particular emphasis on promoting quality, efficiency and equity;
- to continue developing long-term collaborative and mutually supportive relationships with corporate, organisational and individual stakeholders (e.g. industry representatives, commissioners, managers, practitioners, policymakers, patients and the public) so that our research responds to current health challenges, and is able to identify and prepare for future priorities;
- to ensure that outcomes from our research are appropriately and widely disseminated using a variety of media to enhance impact;
- to continue to develop a sustainable research infrastructure and environment that attracts and retains world-class and internationally excellent researchers and supports the development and reputation of our researchers and of the university.

To enable us to meet these objectives, key aims for the development of the Institute over the next year will be to develop a core identity for the LIH through: establishing mechanisms for leadership and agreeing strategic direction through cooperation between our constituent groups; development of shared research programmes; cooperation in postgraduate research and research training, research support for partnerships with the NHS and other health-related industries; enabling high quality funding support through external bids, sponsorship and other funding mechanisms; and support for dissemination (research papers, symposia) and creating impact.

Key enabling initiatives for the LIH in the next 3-5 years will include:

- agreeing a core management group including a director, administrative support and business support for the Institute;
- defining key strategic directions and themes linked to the vision for the LIH and our expertise, for example a theme of healthy aging;
- establishing a core group to support shared research, including a director, statistician, health economist, systematic reviewer (with experience of editing Cochrane reviews), a methodologist and trial manager;
- developing a clinical trials facility for supporting high quality clinical trials;
- establishing patient/user-participation groups for joint studies;
- increasing the numbers of successful, competitively-won funding bids and delivering the high quality research and outputs linked to these;
- working with local services to have direct impact on the delivery of healthcare in Lincolnshire;
- supporting research education and training of members and health service staff, including at doctoral and masters level;
• supporting inter-professional conferences for medicine, pharmacy, nursing and allied health and social care.

Proposed Structure
The LIH will be led by a director, overseen by a management group and supported by a wider steering committee including representatives from its constituent research groups (numbering over 60 academic staff) and external members.

The LIH will aim to develop further its early established profile and reputation to that of a world-class institute. It will do this through:
(a) \textit{World-class and internationally excellent publications} in high impact international journals including subject specific (e.g. Nature, Science, BMJ, Lancet, Biomed Central, American Chemical Society journal groups, Social Science and Medicine, Sociology of Health and Illness, Vaccine) and general medical journals (e.g. New England Journal of Medicine, Lancet, BMJ, Annals of Internal Medicine).

(b) \textit{Creating impact with reach and depth} through influencing health care practice, policy and education locally in Lincolnshire, regionally in the East Midlands, nationally and internationally.

The constituent groups of the LIH have already had strong impact on local, national and international healthcare policy and practice, for example on our work to develop new vaccines (e.g. for hepatitis C), increase influenza and pneumococcal vaccination in risk groups, improve ambulance service care for heart attack and stroke, enhance primary care for insomnia, enhance exercise and physical activity interventions, improve obesity prevention programmes, and improve social care for older people. We will build on our experience of research which impacts on health and social care in Lincolnshire and more widely.

In addition we envisage that the LIH will have impact on the delivery of healthcare locally e.g. recruitment and retention of high quality medical, pharmacy and biomedical scientists leading to improvements in healthcare delivery. The LIH will also provide an umbrella for supporting postgraduate research-informed professional and inter-professional education in medicine, pharmacy, nursing and allied health.

(c) \textit{Developing a world-class research environment:}

i. \textit{Supporting and developing people}

Our staff and postgraduate students are the key to our research environment. The LIH will continue to support schools and colleges to select, recruit, retain and develop researchers with the highest potential to achieve research excellence, providing a planned induction process, mentorship and appraisal to support their progress.

We will link clinical academics and health service staff to our work, for example through shared programmes of research with the NHS and support ‘in kind’ as well through NHS staff contributing to our research programmes.

We will link postgraduate research students to LIH through university, external and self-funded collaborative studentships across cognate areas, e.g. cancer, vaccinations, prescribing, social computing and health.

ii. \textit{Sharing learning}

A core programme of quarterly LIH seminars will ensure that future joint research opportunities can be identified and implemented. In addition, we will continue to promote college-wide and research group seminar programmes, for example bimonthly ‘Improvement Science and Research Methods’ seminars, and quarterly seminars in partnership with the local NHS.

iii. \textit{Income}
We will focus income generation efforts in the following areas:
- High quality competitive funding: research councils, NIHR and related funding, EU2020, charities;
- Sponsorship: through long term mutually beneficial relationships with health care including NHS and industry partners;
- Postgraduate research.

iv. Infrastructure and facilities

The LIH is supported by significant and continuing investment by the university in facilities, staff and studentships in health and health-related research. This is continuing with multi-million pound investments in the Lincoln Science and Innovation Park (LSIP) and Social Science facilities which provide the infrastructure for continuing world-class research. Working in partnership with the Lincolnshire Co-operative, £14 million has been invested to develop a 10-acre facility in the heart of the city opening in 2014. Providing state-of-the-art laboratories, for disciplines such as biology, biomedical science and the new School of Pharmacy, the partnerships within LSIP will ensure staff can conduct cutting edge research shaping future approaches and outcomes in health and social care.

The ability to attract international pharmaceutical and biotechnology companies, linking academia, industry and technology, will continue to strengthen our research infrastructure and environment, supporting our excellent track-record of achievement, leading to greater critical mass in world-class research and increasing our impact.

v. Research governance

Research governance will be provided through School Research Ethics Committees which report to College and University Ethics Committees. Induction processes include ethics training and Good Clinical Practice training for clinical trials. We have agreed a Memorandum of Understanding with primary care through the Lincoln Health and Social Care Steering Group to ensure we follow the NHS Research Governance Framework. A proportion of sponsored research projects will be audited.

University Membership

The LIH is a cross-disciplinary group which includes the Following Research Groups drawn from the Colleges of Science and Social Science.

- **Molecular Basis of Disease (MBoD) Research Group**: Understanding disease at a molecular level in order to improve diagnosis and treatment including infectious and chronic disease.
- **Drug Design and Delivery (DDaD) Research Group**: Design and delivery of novel therapeutics, using a range of techniques to define new methods, novel delivery strategies for challenging small molecules interfacing nanotechnology with biologics.
- **Lincoln Social Computing Research Centre (LiSC)**: Research the interface between computer science and social behaviour focusing on social computing from a Human Computer Interaction perspective including design and development of experimental social software platforms and applications for behavioural change to improve physical and mental health.
- **Laboratory of Vision Engineering (LoVE)**: Specialise in the capture, transmission, processing and understanding of image, video and other high-dimensional data applied in the fields of novel solid-state imagers, embedded vision systems, medical...
| Community and Health Research Unit (CaHRU) | Translational empirical and operational research relating to quality improvement in health and social care including quality and outcomes in primary healthcare, prehospital and emergency quality and outcomes, older people and wellbeing. |
| Health Advancement Research Team (HART) | Investigate a wide range of health- and body-related issues including exercise, obesity and ageing from fundamental research to specific interventions using a variety of methodological and disciplinary approaches, drawing upon expertise in psychology, sociology, biomechanics, nutrition, and physiology. |
| Perception Action and Cognition (PAC) Research Group | Undertake research in vision, visual movements and processing, perception cognition and memory including the use of visual processing in identification and treatment of disease. |
| Policy Studies Research Centre (PSRC) | Focus on a range of policy-relevant areas of social research including those relevant to healthcare, health and wellbeing such as governance and regulation, social exclusion/inclusion, human rights and participation/representation. |

The LIH steering group, which supports and guides our activities, includes members from each of these groups undertaking health-related research together with external stakeholders including Lincolnshire Community Health Services NHS Trust, East Midlands Ambulance Service NHS Trust, United Lincolnshire Hospitals NHS Trust, Lincolnshire Partnership Foundation Trust, Lincolnshire Commissioning Groups, Public Health and internationally with the European Forum for Primary Care and EMS999 Forum. We already have strong links with the National Institute for Health Research, the Comprehensive Clinical Research Networks, the East Midlands Collaboration for Applied Leadership in Health and Care and Academic Health Science Network.

We are exploring wider collaborations with colleagues in the College of Arts in relation to architecture (the healthcare built environment), design (of health technologies), media and journalism (public understanding of science).

We are also planning to strengthen collaborations with (a) the Healthcare Engineering stream of the Systems Group (School of Engineering) who focus on bioengineering, implant design and stem cell response modulation using techniques such as laser surface treatment (b) the School of Architecture in relation to healthy environments for the ageing population.