Research Profile

Assistive Technology
The core mission of the Centre is the pursuit of practical applied research in the field of health care and its translation into evidence based policy, practice and clinical protocols.

The Centre benefits from the wider expertise within the University. Sheffield Hallam is one of the largest providers of health and social care professional training in the UK. This means we can access high levels of expertise in areas including • nursing and midwifery • physiotherapy • occupational therapy • radiography • radiotherapy • social work • paramedics and operating departments.

Beyond healthcare, we work with colleagues in areas including • sport and exercise • psychologists • biosciences • design • modeling • engineering • computer science • business management • environmental sciences • town planning. The Centre also benefits from an in-house team of experienced information scientists who support our research staff by conducting literature searches and reference management for bids and funded projects, and providing information skills training.

The Centre hosts a vibrant postgraduate research training program with over 80 doctoral students in health and a further 90 students in Sports and Bio-science.

Attached are a sample of recent research projects undertaken by staff from the Centre for Health and Social Care Research in conjunction with academic colleagues from the Nursing, Allied Health and Social Work Departments of the Faculty of Health and Wellbeing at Sheffield Hallam University.

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A team of researchers from Sheffield Hallam University worked in partnership with other organisations including the University of Southampton, Oxford University, Nottingham University and Dundee University on a project to explore computer games and virtual reality as a way to promote physical activity and leisure for people who have had a stroke.

The main aims of the project were:

• to identify practical technological arrangements for real world users that meet real needs and can be deployed in a variety of domains
• to design in partnership with users of suitable technological arrangements that are acceptable to them and meet the needs of key illustrative user groupings
• to develop engaging and stimulating content that both promotes therapeutic activity that will enhance recovery or maintenance of motor or cognitive skills, is fun to use and relevant to people and their particular condition
• to identify and assess of the clinical benefits and accessibility of this approach in real world settings
• to develop a strategy that identifies issues of cost, training and deployment to allow this form of treatment to be scaled up so that it can be more widely used.

Running from 2007 to 2010, the project received £578,000 funding from the EPSRC to investigate the development of engaging and stimulating content that promotes therapeutic activity to enhance the recovery or maintenance of motor or cognitive skills and is fun to use in a way that is relevant to people.

Focus groups were held as a means of finding out what technologies people would engage with and respond to, which included finding out what technologies they currently used, and the varying degrees of interest that people had in them.

Through a variety of workshops, case study personas and individual motivators were set up as a means of facilitating iterative prototyping to provide basic personalised technology ideas. These designs have been tested by stroke and health and social care researchers, providing valuable information on the modelling needed to develop effective products which motivate long-term exercise.

You can download the research report here: http://www.informatics.sussex.ac.uk/research/groups/interact/Motivating%20Mobility%20Sx.pdf

‘The central aim is to motivate people with mobility issues to engage in physical, cognitive and leisure activity and connect people through interactive and mobile technology using fun, games and real-world leisure activities’

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Research Profile Summary

Motivating mobility: interactive systems to promote physical activity and leisure for people with limited mobility

‘The central aim is to motivate people with mobility issues to engage in physical, cognitive and leisure activity and connect people through interactive and mobile technology using fun, games and real-world leisure activities’
Sheffield Hallam University’s Art & Design Research Centre received funding in 2008 from the Engineering and Physical Science Research Council (EPSRC) for a three year project aimed at investigating and improving the quality and design of bathroom furniture for older people.

Supported by the bathroom manufacturer Ideal Standard, the project set out to look at ways of maximizing the space available to help ease the difficulties caused by chronic age-related health conditions such as:

- arthritis
- osteoporosis
- stroke, and
- macular degeneration.

The project adopted creative strategies in the design of bathroom furniture to create a space with the flexibility to evolve and grow to reflect and meet the changing needs of individuals and their families as they age.

It also aimed to create a range of innovative and desirable bathroom prototypes (both bathroom furniture and assistive technologies for bathroom use) that are sensitive to the problems of living with disability, which do not stigmatise, are capable of manufacture and will demonstrate the principles developed in the project. The challenge was to design quality products that all bathroom users would find acceptable as well as meeting the specific needs of older and disabled people.

The project team set out to develop a robust methodology for fostering co-design dialogue between designers, researchers and people with chronic age related conditions which lead to disability and frailty.

Community groups including Sheffield Elders, Sheffield 50+ and the University of The Third Age were involved in consultation and feedback on the progress of the project.

For more information, see www.lab4living.org.uk/future-bathroom

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‘This project is about improving the quality and design of bathroom furniture for older people’
Funded through the European Union, the
RICHARD project has been established to define
and implement innovative models, based on
Information and Communication Technology
(ICT), for the management of chronic conditions.

RICHARD has been set up in recognition of the
need to make healthcare systems more efficient
while managing their costs effectively. ICT can
act as a major change agent in this process, but
only if systemic aspects, such as the interrelation
of ICT with organisational and non-technological
components of healthcare systems, are taken into
account.

Working in four different European regions,
RICHARD aims to:
• map current activity
• highlight examples of good practice
• discover how remote e-health should function
to provide maximum benefit for patients and
service providers.

Backed by £130,000 of funding, the scope of the
RICHARD project is to define new scenarios of
care and to design innovative ICT-based clinical
pathways that, through the use of technology and
the integration of resources and capabilities, allow
patients to enjoy a better quality of life, supported
outside the hospital.

The expected impact of the RICHARD project is
on three separate levels. Firstly, the team aims to
develop innovative clinical sustainable services for
the short-term management of chronic diseases.
Then they will investigate the integration of
technology and, finally, will implement a long-term
ICT-based chronic care model.

The project also aims to compare learning
across the four countries involved and to
make recommendations and share learning
internationally.

To find out more, visit
http://www.richardproject.eu/
This project aims to support a deeper understanding of the potential for technology in the support of self-management of health conditions. The project team developed a personalised self-management system—integrated systems that can be used in a person’s own home, and consisting of a touchscreen ‘home hub’ and a mobile device.

The system has specific additional functionality to meet the needs of people with three particular health conditions:

- congestive heart failure
- chronic pain
- stroke

Backed by £130,000 of funding from the European Union, this project will create a significant impact for both healthcare professionals and patients alike, with the proposed technologies reducing economic and social barriers for both parties.

There will be many benefits for patients, including a greater amount of support and help to cope with long-term conditions, as well as the necessary assistance to be able to achieve and maintain quality of life.

For healthcare professionals, this new initiative will help to decrease GP and hospital waiting lists as users become less dependent on NHS resources and can self-manage their treatment instead. This will enable staff to be more selective when considering how they allocate time and resources, creating economic benefits for healthcare organisations.

The project team has also included industrial partners who are major providers of technology in the UK and globally.

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‘Working towards a deeper understanding of the potential for technology in the support of self-management of health conditions’
KT-EQUAL is a consortium of UK researchers, dedicated to extending quality life for older and disabled people. The project aims to show how ageing and disability research can make a real difference to people’s lives by:

• bringing together researchers, policymakers and service users to focus on the issues that are important to older and disabled people
• influencing regulations and good practice across a range of industries, including product design, rehabilitation and the built environment
• gathering and sharing knowledge and expertise about people’s health and well-being, independent living, self-management and the quality of life
• seeking out the views and involvement of older people.

With more than £1.8 million funding from the Engineering and Physical Sciences Research Council, KT-EQUAL is working to make sure that years of investment in high quality research is translated into real benefits with an impact on people’s lives.

This on-going project is looking at the effect of old age and disabilities on everyday life and the impact that research can have on this. By collecting and collating a wide range of research, the project is helping to spread knowledge and information and to stimulate further research into this vital area.

Project tools include a regular blog which is regularly updated with key pieces of research and news, as well as events and seminars which bring together healthcare professionals and disabled and older people to share knowledge and expertise.

For more information, visit http://kt-equal.org.uk/