Technology & dementia

Participants: A. ASTELL (UK), G. MOUNTAIN (UK), S. MARTIN (UK), J. BOGER (CANADA), and H. PIGOT (CANADA). **ISSUE** Canada-UK collaboration on the development and implementation of assistive technology for people with dementia. **CONTENT** Providing dignified and effective care for people with dementia poses a great challenge to professional and informal caregivers. This challenge can be met in part through the use of appropriate technology that is both useful to and useable by people with dementia and their caregivers. Although there has been much technology research in this area in the last 10 years, there has been little implementation of assistive technology for people with dementia 'on the ground'. Why is this and what can be done about it? To answer these questions and to start to solve the problem, a group of 25 academics, industry and government representatives from a range of relevant disciplines gathered in Toronto (Canada) and Bath (UK) to identify the challenges faced and to identify potential solutions. Representatives included senior researchers working in assistive technology for people with dementia, as well as epidemiology, occupational therapy and gerontology. UK and Canadian funding bodies were represented (EPSRC and CIHR) as well as senior industry representatives from healthcare, housing and social care, and technology development. Also represented were business development organizations such as the UK Regional Development Agencies and the UK NHS Innovation Hubs. The workshops were funded jointly by the UK Engineering and Physical Science Research Council and the Canadian Institutes of Health Research Institute of Aging. This symposium will review the findings of the workshops, present ongoing specific research projects that have come out of them, and explore challenges and opportunities for international collaboration in initial and transitional research. **STRUCTURE** The symposium will open with a brief presentation by the conveners that will set the tone and direction for the symposium, followed by presentations of work that has emerged from the Canada-UK collaboration and a presentation by its organizers. The symposium will conclude with a panel discussion and questions. **CONCLUSIONS** The symposium aims to develop and strengthen links between the two countries in this area, leading to a better understanding of how researchers can work together, and how new joint research programs can be carried out.

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Purpose Computer Interactive Reminiscence and Conversation Aid (CIRCA) is an interactive multimedia touch-screen computer system designed to prompt reminiscing and support conversation between people with dementia and caregivers. This presentation describes a study that arose through the UK-Canada collaboration to investigate how to introduce CIRCA into care homes for people with dementia. **Method** CIRCA comprises a multimedia database of photographs, film and audio clips from the 1930's onwards, presented on a computer touch screen. There is no mouse or keyboard and CIRCA requires no previous computing experience to use it[1]. Twenty staff, ten in each of two care homes owned by Sanctuary Care, were given information and instruction about how to use CIRCA to prompt

reminiscence and use the retrieved memories to support conversation. The care homes are both registered with the Care Quality Commission in England for the provision of care for people aged 65 and over with dementia. One home is located in the East End of London (Home 1) and the other in a rural part of England (Home 2). Following the training CIRCA was left in each home for initial periods of 75 days (Home 1) and 90 days (Home 2), respectively. During this time the staff were asked to record the date and length of each CIRCA session that took place and to describe what happened. At the end of the study, a number of CIRCA sessions were video-recorded and semi-structured interviews were used to explore the experience of staff of using CIRCA. **Results & Discussion** Positive reactions to CIRCA included a range of verbal and non-verbal behaviours including smiling, laughing and singing indicating positive outcomes and enhanced well-being in residents. Staff identified a range of benefits both for themselves and their residents including increased satisfaction with the care task, enhanced understanding of the resident's life story and more clearly 'seeing the person'. In both care homes, the log revealed that family members visiting their relatives had also used CIRCA and interviews with two of these further supported the findings of a perceived positive impact on the care environment. The study also highlighted some of the obstacles of introducing novel technology into dementia care environments and the broader issues associated with changing the culture in care homes.

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G. MOUNTAIN, C. CRAIG. What do people really want? Meeting the needs of people with early dementia and their carers through technology. Gerontechnology 2010;9(2):69-70;

doi:10.4017/gt.2010.09.02.050.00 **Purpose** Implementation of a number of UK policy initiatives has led to an increasing focus upon how telecare technologies might assist older people including those with dementia to remain living in the community for as long as possible. Other UK and international policy is focused upon how people with long term conditions can be enabled to self manage their condition, thus improving the quality of life of the individual. Both of these policy initiatives aim to reduce the costs of avoidable hospital and residential care admissions. Until recently, the potential that people with dementia might have to self manage their condition in the early to middle stages of the illness was set aside. However, this is now changing due to a combination of factors including the availability of memory enhancing medication, the voices of people with dementia which are now beginning to be heard and the widened horizons of some service providers regarding what might be possible. Technology used in the context of self management therefore needs to move beyond devices for safety and surveillance to those that facilitate a range of self-managing activities including maintenance of independence and skills as well as leisure and enjoyment. **Method** This paper presents some of the views of people with dementia and their carers expressed during a consultation with them about their experiences of disclosure of the condition and what it is like to live with dementia. The consultation took the form of individual interviews and a six week consultation group with a different cohort, where participants were encouraged to develop, explore and experiment with ideas. **Results & Discussion** The respondents raised some issues which are already widely acknowledged, such as the time taken for diagnosis to be confirmed. However it also revealed some of the more personal and difficult challenges that can arise both for people with dementia and for their carers. The process of consultation also confirmed the attention to detail that is required for successful work with people with dementia. The outputs from the consultations have been used to underpin a draft self management program for people with dementia which is being published. The outputs have also been used to identify which technologies are already available that might fulfill a self-managing function as well as gaps and inadequacies in the existing product range.

S. M*ARTIN*, M.G. G*ALBRAITH*, J. W*ALLACE*, M.D. M*ULVENNA*. *Transferring research and innovation Living Lab (TRAIL): Experience of a living lab. Gerontechnology 2010;9(2):70;*
doi:10.4017/gt.2010.09.02.051.00 **Purpose** In 2006, the Finnish EU Presidency launched a new Public-Private-Partnership (PPP) innovation model called the European Network of Living Labs (ENOLL). There are currently over 100 labs accounting for a network of more than 70 million-end users that connect the capabilities of local prototyping-grounds with a critical mass to attract investments[1]. The University of Ulster is making a significant contribution to the living lab concept through its TRAIL initiative. TRAIL represents a developing PPP where companies, public authorities and communities work together creating, prototyping, validating and testing new services, businesses, markets and technologies in real-life contexts in the regions, rural areas and virtual spaces between public and private players in the region of the North of Ireland. It is our strategic intention to collaborate further with our existing international networks and to integrate fully our activities with ENOLL members and other international clusters. **Method** This paper presents two case studies of research projects adopting the living lab approach of user-driven innovation, where empirical research suggests that user-driven innovations are more fruitful as a major source of innovation[2]. Specifically this work engages with older people as the co-creators of innovation close to market, central to the research and innovation of devices and services to address their specific needs. NOCTURNAL is a project with a focus on the night-time needs of people with early stage dementia exploring if technology can be used as a therapeutic intervention building on the telecare risk management platform. A second project will be presented 'myHealth@age' which explores the specific needs of healthy older people living in isolated rural communities. Both research projects have developed consortiums including older people, academia, public sector healthcare providers and industry. **Results & Discussion** Delivering user-driven innovation in practice within TRAIL is rewarding and challenging, this paper will focus on some of the emerging issues within the lab. There is a significant body of academic research that supports the premise that user-driven innovation creates value in markets and for society. The network of living labs in Europe has been created, partly based upon this premise, but it can be argued that there is a lack of evidence that demonstrates how such living labs articulate their value proposition, and how they carry out activities on the ground to work with users to create the added valued inherent in early innovation processes. The issues of working with vulnerable users; managing the tension between user needs and advancing the research agenda and balancing this with the desires of the industrial partners will be considered within this presentation.

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J. B*OGER*, N. T*URCOTTE*, M. Q*URAISHI*, L. D*UNAL*. *Assistive technologies used to support occupations by community-dwelling older adults with dementia and informal caregivers. Gerontechnology 2010;9(2):70-71*; doi:10.4017/gt.2010.09.02.052.00 **Purpose** While there are many types of assistive technologies (ATs) available to support persons living with dementia and their caregivers, there has been little research into the types of AT used by people living in the com-

munity and how it is used. This project focused on developing data collection methodologies to identify ATs used by community-dwelling older adults with dementia and their family caregivers in the context of supporting everyday occupations. **Method** Ten family caregivers of older adults with dementia and ten community-based occupational therapists in the Toronto region participated in one hour long, one-on-one interviews. Through Likert-based and open-ended questions, they were asked to identify types of relevant ATs used in the home (i.e., items that support daily occupations that have been impacted by dementia-related impairments), how and when the ATs were used, who was using the ATs, and to rate the ATs' effectiveness. The data collection techniques used in this research are intended to collect a mixed occupationally and functionality based understanding of AT use that will complement more detailed approaches[1,2]. **Results & Discussion** Results are expected to inform awareness, education, policy, and practice surrounding the use and design of AT. This includes not only informing clinical practices regarding the recommendation of AT to clients, but also guiding technology developers to understand, and therefore address, the needs and abilities of targeted user groups. Results will also inform the development of a larger, international study examining use of AT by community-dwelling older adults with dementia and their informal caregivers.

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Purpose Autonomy should preferably not be disrupted due to cognitive deficits. Memory, planning and attention deficits lead to difficulties in understanding the environment and organizing daily life. The DOMUS laboratory at the Université de Sherbrooke conceives cognitive assistance for aged people with MCI and dementia, in order to keep them at home. The cognitive assistance is both designed for the elder and his caregiver in order to alleviate the caregiver load and facilitate communication. **Method** The assistive technology is based on artificial intelligence and ubiquitous computing paradigms. The DOMUS laboratory is equipped with a smart apartment where sensors gather information about the activity performed and actuators display visual and vocal information. To avoid missing appointments or activities due to forgetfulness, agendas are specially conceived for people with cognitive impairments. One is mobile and delivers a little information at a time[1], another is installed on the wall and designed to assist with time orientation and to be pleasant. To help people realize complex activities an assistant provides information on a screen and in the environment[2]. It gives advertising according to the actions performed by the elder. **Results & Discussion** The DOMUS laboratory conducts experiments with the targeted population and their caregivers. The User Centered approach applied during the conception implies iterative prototypes of the assistive technology. Our interdisciplinary approach brings computer scientists, therapists and designers to work together. By giving appropriate information at the right time, we hope to help people to be more autonomous and have more in control of their life.

References
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