
Crossing HCI and Health: Advancing Health and Wellness Technology Research in Home and Community Settings

Marilyn Lennon

Mobiquitous Lab
Computer & Information Sciences,
University of Strathclyde
Glasgow, UK
Marilyn.Lennon@strath.ac.uk

Lynne Baillie

Interactive and Trustworthy
Technologies Group
Glasgow Caledonian University
Glasgow, UK
L.Baillie@gcu.ac.uk

Jettie Hoonhout

Experiences Research Department
Philips Research
The Netherlands
jettie.hoonhout@philips.com

Judy Robertson

Digital Education
Edinburgh University
Edinburgh, UK
Judy.robertson@ed.ac.uk

Geraldine Fitzpatrick

Head of Human Computer
Interaction Group
Vienna University of Technology
Vienna, Austria
geraldine.fitzpatrick@tuwien.ac.at

Abstract

The ubiquity of mobile technology and advances in wearable health and well-being technologies offer exciting opportunities for technology supported home and community care. But are we ready for digitally enabled self-care? How can the CHI community share best practices and methods in order to continue to advance research that crosses methodological and cultural boundaries between Health and HCI? This workshop will bring together key researchers working in and across both HCI and Health to share these existing challenges and opportunities for digital health research and practice and to continue to build capacity in the crossings between HCI and health.

Keywords

Health; wellbeing; HCI; Health; Methods; Design; Evaluation; Standards; Multidisciplinary.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

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Motivation

There has been an increase in submissions to CHI that cross the boundaries between digital health services research and HCI [5](e.g. workshop series in *Interactive Healthcare Systems* at CHI, and the *HCI Research in Healthcare: Using Theory from Evidence to Practice* and *Enabling Empathy in Health & Care: Design Methods & Challenges* workshop, CHI'14).

The increase in research crossing HCI and health is partly driven by initiatives from government, policy makers and funders to promote and support digitally enabled self-care, and in particular technologies for health and wellness that will enable people to remain independent in their own homes and communities for longer. This is both economically driven (current care models in most countries cannot be sustained with the increasing ageing population and people managing long term chronic conditions) and also socially driven (to empower and enable the population to proactively control and manage their own health and wellbeing and to stay well for longer independently).

The ubiquity of mobile devices and advances in wearable health-related technology provide great opportunities for innovation in digital health and wellness. The home is a complex personal and shared space and studying interaction with technology in this context is particularly challenging (making technology that people can use, and people want within their homes). There has also been a growing awareness within health and social care professions and practices that people should not be seen as passive recipients of care, but as co-decision makers (patient engagement, shared decision making, etc.) meaning that examining

how people interact with these technologies themselves becomes increasingly important.

Challenges to be Addressed

Despite advances in the technology there are still currently many barriers and challenges arising that are slowing the progress that could be made in this area and restricting the uptake and integration of these technologies into routine care practices and people's homes and communities. Researchers working between HCI and Health are for example already struggling with issues including (but not limited to):

- Which **methods** are right for studies relating to technology in home and community care settings (addressing the concerns raised in [1-4] and considering methods from Randomised Control Trials, to realist evaluation, to lab testing, to design and evaluation at scale and in the wild)?
- Which **levels of user engagement** are appropriate for designing health and wellness products (fully collaborative design through to designer led techniques)? And do users feel empowered and in control of their own data?
- What are the most appropriate **ways to collect and manage health and wellness data** (privacy, ethical and information governance issues)?
- How might we **manage differences across regions in culture, practices and expectations between the many stakeholders groups** e.g. users, health professionals, clinicians, carers, charities, funders, policy makers etc.
- How do we make sure that our methods meet the challenge of **empowering and engaging patients** and ensure shared decision making regarding the technologies use in this critical area of a user's life?

There are clearly opportunities in this space but many of these are still being explored independently by the health and HCI communities.

Overview of Workshop

This workshop will bring together health and HCI experts to share best practices and existing methods and approaches and to share their experiences (good and bad) in combining and crossing the boundaries between the HCI and Health disciplines. The outcome of the workshop will be a position paper outlining the current challenges in this area and the key steps we think funders, policy makers, researchers and end users need to take to advance health related HCI research for home and community contexts now and moving forward into the digital self-care age.

This will be a one day workshop with between 12 and 20 participants. We will accept up to 15 short (4 pages) position papers for presentation on the day but will vary the presentation format (short talks, posters and demos/videos) to maximize interaction between participants and opportunity to share lessons learned on the day. The presentations and discussions will focus on the challenges of conducting research in the crossing between health and HCI and the breakout sessions will involve identifying solutions and ways forward in this thriving area of research.

Before the workshop: Participants will be invited to send 3 key challenges and 3 key opportunities to the organisers. They will also be encouraged to share links to demos videos and project websites in order to maximize identification of lessons learned at the workshop.

After the workshop: The workshop organisers and extended program committee will submit a position paper to the Health Informatics Journal (this has been discussed with the editor and agreed in principle) on the outputs from the workshop (the grand challenges and opportunities for advancing the health and HCI research agenda. We will also offer a short article version of our lessons learned for publication in the ACM Interactions magazine.

Organizing Committee

Dr. Marilyn McGee-Lennon (MML) is a senior lecturer and researcher in HCI and currently holds a Chancellor's Fellowship position in Technologies for Health and Wellness (School of Computer and Information Science) at the University of Strathclyde. She has held several grants investigating novel multimodal technologies for health and wellbeing, capturing requirements for the design of smart homes (SFC MATCH Project) and personalisable reminder systems for older adults (EPSRC MultiMemoHome Project). She is currently lead scientist on the TSB funded dallas programme evaluating the benefits and impact of digital health technologies at scale in the UK.

Prof Lynne Baillie has been involved in user centred design of home, mobile and rehabilitation technologies for over ten years. She is interested in how we design healthcare technologies that fit seamlessly into the home environment. She has just completed an award winning 4 year £1.5m UK research council grant on designing technology for home rehabilitation. She has also led and been part of multidisciplinary teams building interactive applications for mobile and home devices for companies such as Alcatel-Lucent, Siemens,

Telekom Austria, Vodafone (Austria), Bang and Olufsen, T.Systems and Orange (part of France Telecom).

Dr Jettie Hoonhout (JH) is a senior scientist at Philips Research, Eindhoven, Netherlands. Philips Research supports the Philips Business in developing new technologies and concepts for (among others) the Healthcare business groups. JH conducts research in the domain of consumer lifestyle and home healthcare, with a focus on nutrition, behavioral changes towards healthier lifestyles, and applications for chronically ill people. Another research interest UCD and UX methodologies to support such research.

Prof Judy Robertson is a member of the Physical Activity For Health Research Centre at the University of Edinburgh. She is interested in applying behavior change techniques to the design of new technologies to increase physical activity and reduce sedentary behavior. She recently completed a cluster randomized controlled trial of an exergame for children in the school setting (EPSRC IAA funded) and is working on a smart cushion to encourage older adults to sit less. She has worked with the Royal Edinburgh Hospital on participatory design of technological play spaces.

Our extended programme committee includes a world class team of experts working in the crossover between HCI and Health including: **Prof Geraldine Fitzpatrick**, Institute of Design and Assessment of Technology, Vienna University of Technology, **Dr Lorna Paul**, Reader in Rehabilitation, University of Glasgow; **Professor Katie Siek**, Associate Professor in Informatics at Indiana University; **Dr Maria K Wolters**, School of Informatics, University of Edinburgh; **Prof Fillia Makedon**, University of Texas

Arlington; **Dr Matt-Mouley Bouamrane**, Research Fellow in ehealth, Institute of Applied Health Sciences University of Aberdeen.

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