



# Lilian ADER

**Institution:** Applied Research for Connected Health (ARCH) , University College Dublin  
**Academic Mentor:** Professor Brian Caulfield  
**Commercial Partner:** Kinesis Health Technologies Ltd  
**Commercial Mentor:** Dr Barry Greene

The aim of Lillian's research is to improve data capture in health technologies by making them easier to use. She has a PhD in Human-Computer Interaction from the University of Toulouse, France. Her PhD research investigated how the movements of older adults affect their interaction with touchscreen devices. Lillian's Master's Degree is in Arts and Digital Media from the University of Paris 1. Her primary degree is in Communication, Image and Sound from the Federal University of Sao Carlos, Brazil.

She has experience of web accessibility, interaction design and use of technologies by people with special needs. Her core research interests include user experience, user-centred design, connected health, human movement analysis, and accessibility.

Lilian is hosted by Applied Research for Connected Health, based at NexusUCD and affiliated to the School of Public Health, Physiotherapy and Sports Science, UCD. *See case study overleaf*

## Professor Brian Caulfield

Professor Caulfield is a full professor of physiotherapy at the School of Public Health, Physiotherapy and Sports Sciences, UCD and director of the UCD Insight Centre for Data Analysis. He works on understanding and enhancing human performance through the use of new technologies such as mobile devices and body-worn sensors. He has co-authored over 200 research publications, six patents, and has supervised over thirty graduate research MSc and PhD projects to completion. His patents and publications have made a recognised contribution to the Connected Health domain.

## Dr Barry Greene

Dr Greene is Chief Technology Officer and co-founder of Kinesis Health Technologies. After his PhD, he was a senior research fellow at UCD; and a postdoctoral fellow at University College Cork. He was also a senior research engineer at Intel Ireland. Dr Greene has significant expertise in healthcare technology and data analysis. He has supervised postdoctoral fellows; was a mentor of engineers at Intel and mentor of postgraduate students during his postdoctoral research.

## Applied Research for Connected Health (ARCH) - NexusUCD

ARCH is the Irish national centre for applied Connected Health research. As an industry-led technology centre, it provides access to world-class healthcare professionals, academics, and industry networks to explore and evaluate solutions for the global market. ARCH's efforts are aimed at accelerating and commercialising Connected Health innovations.

## Kinesis Health Technologies Ltd

Kinesis is a registered medical device manufacturer, developing solutions for intelligent healthcare diagnostics. The company has developed validated, proprietary technologies for healthcare professionals that allow high-quality measurement of human movement, as well as improving the ability to identify patients at risk of falling.

## Lilian's project

---

Lilian's current research is focused on technologies for mobility assessment of older adults at risk of falls. Her goal is to help users have better control of the data-capture process in order to get more accessible and accurate assessments of gait and balance.

Quantitative assessment of gait and balance is important to identify and understand mobility impairment, a fundamental component of a health condition – and of independent living.

Highly specialised settings allow very accurate measures but require a controlled environment, trained professionals and expensive equipment.

Mobile devices, including inertial sensors, allow mobility assessments in a less controlled context by different groups of users.

In her research, Lilian investigates the factors that affect the accuracy of assessments and develops strategies to provide better feedback to the user, making these technologies easier to use.

---