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The travel grant awarded by the Faculty of Medical Sciences allowed me to attend the AAIC 2018 conference in Chicago, Illinois from the 20th to 27th July 2018. I attended both the main conference and the “Technology and Dementia” preconference, presenting different aspects of my PhD research. This work focuses on the potential for gait analysis, both in traditional laboratory environments and in free-living, home and community, environments in aiding prediction and differential diagnosis of dementia.

To begin, I gave an oral “flash” presentation at the preconference entitled “Continuous monitoring of gait: what can it tell us about dementia?” This talk focused on data I collected during my PhD. I placed body-worn sensors on the lower backs of people with dementia, who wore them continuously for seven days. This allowed me to obtain information about their habitual walking habits, such as how much walking they do and how long their walking bouts are, and information about their spatiotemporal gait characteristics, such as how fast they walk and how long it takes them to make a step. This work was funded by the Alzheimer’s Society as part of their Newcastle Doctoral Training Centre and provides a novel insights into both everyday behaviour of people with different types of dementia, and gait impairments in unconstrained settings. My research demonstrated the feasibility of collecting this data and the gait’s ability to discriminate between dementia subtypes.

I received positive feedback from the audience and numerous questions discussing future steps in this field and potential alternative utilities of wearable technology.

At the main conference, I presented a poster on the work described previously and a poster on gait analysis in traditional lab based settings. The latter was also based on data I collected during my PhD, and demonstrated unique patterns of gait impairment between Alzheimer’s disease and Lewy body disease. This positive finding supports the suggestion that gait could act as a potential early marker for dementia and its subtypes and may be a useful contribution to the clinician’s toolkit.

There were many interesting and relevant talks to my research at both the preconference and main conference. Particular highlights for me include Jeffrey Kaye from Oregon Health and Science University, and Aron Buchman from Rush University.

Jeffrey Kaye spoke about smart home technology and the future of digital biomarkers. Valuable take home messages from this consider our current methods of assessing changes in cognition – these provide only a brief snapshot in an artificial environment. Ongoing and future research needs to consider that the most effective methods could be the most passive.

Aron Buchman talked about using wearable technology to tell us both what a person can do and what a person actually does. His research has focused on measuring total activity through wearable technology and assessing its utility for predicting cognitive impairment. He is now branching into the field of gait research – making this talk highly relevant to my own interests.

Finally, I was delighted to speak on Dementia Researcher’s podcast, an initiative set up by the National Institute of Health Research. This gave me an opportunity to disseminate key events and talks of interest from the conference to researchers around the world, and to discuss how my own work fits into the spectrum of dementia research.