

## BIOINFORMATICS SEMINAR

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#### APPLICATIONS OF ULTRA-WIDEBAND RADIO FREQUENCY IDENTIFICATION DEVICE (UWB RFID) TECHNOLOGIES TO THE CONTINUOUS ASSESSMENT OF HEALTH BEHAVIORS AND RELATED HEALTH OUTCOMES

Sensor technologies are rapidly evolving and extending their reach to critical applications across health care settings including the home, assisted living, acute care and long-term care environments. These sensor technologies have the ability to integrate across these settings and allow for transparent, unobtrusive monitoring of sensitive populations. In this presentation we will discuss the use of real-time sensing and behavioral recognition for the characterization and interpretation of health metrics. Specifically, Dr. Bowen will focus on the use of a wearable Ubisense real-time tracking technology to understand and predict falls, UTI's, delirium and progressive cognitive decline in an institutionalization population with the goal of informing tailored nursing care plans to prevent these acute events and reduce associated health care costs.

#### BIOGRAPHY

Dr. Bowen is a social gerontologist with interests in efficacy trials of health care technologies to inform translational research and system-wide implementation. Specifically, Dr. Bowen utilizes unique methods and measures from sensitive and specific real-time ultra wideband tracking and other sensor technologies to show how intra-individual changes in ambulation characteristics are associated with imminent falls and other acute events (e.g., UTIs, delirium) in a vulnerable population of older adults. The outcome of Dr. Bowen's current VA Rehabilitation Research and Development award is to utilize real-time tracking to develop tailored nursing interventions to prevent/delay acute events among institutionalized older adults with cognitive impairment. Dr. Bowen received her PhD in the Sociology of Aging and Population Health from Virginia Tech and has a graduate Certificate in Gerontology and Race and Social Policy.



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