

Center for Bioengineering Innovation Lecture Series Fall 2015

Friday, October 16, 10-11am
Biology (Bldg 21) Room 256
617 S Beaver St

Wearable Informatics:

Leveraging Human-Computer Interfaces to Improve Healthcare

Using wearable technology, we have an opportunity to gain new insights on human activity and movement, apply personalized medicine, and even predict the presence of disease. Dr. Winfree will present on his past multidisciplinary research and future collaborative informatics research plans. This includes such topics as the PDShoe and SEnsole devices, data extraction from commercial activity monitors, and research on assistive technology. Though such services as Fitabase provide access to minute-by-minute level data on step count, activity level, and heart rate, previous studies have relied on daily summaries only. Data from a recent pilot study of over half a million minutes of step data will be used to present on data extraction and reduction methods to provide new insights on activities levels of college students with implications of impact on disease at-risk persons. Wearable technologies are becoming more and more commonplace in our daily life. They offer rich data sets with the promise of a better understanding of human activity and the ability to impact our lives in a positive way. The primary aim of the Wearable Informatics Lab at NAU will be the conversion of raw data into meaningful understandings and the human-computer interface of wearable technologies.



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Dr. Kyle Winfree completed his B.S. in Physics at NAU, after which he was the American Indian Mobile Educational Resource Coordinator, taught University Physics I at Coconino Community College, and studied the South polar cap of Mars at the USGS Astrogeology branch. In 2007 he moved to Pennsylvania, where he completed his M.S.E. in Robotics at the University of Pennsylvania. His thesis was on an ungrounded haptic device called the iTorqU. Following that, he attended the University of Delaware where he studied stroke, and later Parkinson's disease rehabilitation robotics. He completed his Ph.D. in Biomechanics and Movement Science at the University of Delaware in 2013. He studied Parkinson's disease intervention and assessment technology during his post-doc.