Wearable data can inform amputee rehabilitation and be incorporated into a mobility training system for amputees to use outside the clinic.

**Background**
- Amputation and lower-limb disability lead to significant changes in gait patterns
- Efficient, informed gait training → enable better outcomes
- Research has identified a variety of different parameters (spatiotemporal, kinematic, kinetic, etc.) that can describe features of gait
- No consensus as to which parameter(s) is/are the most important for good quality walking

**Research Question**
Can we develop a clinically relevant wearable system for remote gait monitoring applications?

**Methodology**
- Collect inertial sensor data using Xsens system during and around gait training sessions with a physiotherapist at HB
- Analyze changes in gait parameters and signal profiles
- Use changes to inform design of wearable gait analysis system

**Discussion**
- Significant changes seen within both spatiotemporal parameters and kinematic profiles for 2 of the 3 participants
- For 1 participant, gait profile changed in alignment with PT goals. For the other, gait parameters and signal profile worsened
- Euclidean and DTW classifiers performed generally well and followed similar trends to the gait parameters

**Conclusions/Next Steps**
- Preliminary data suggest PT can induce measurable, significant changes in gait profiles
- Validation of signal-based analysis indicates models perform in line with gait profile trends measured by wearable system
- Next steps are to incorporate into portable system and test with performance feedback to see whether gait re-improves