

# **Accelerometers and You**

## **ASU Capstone Project**

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# Why are we here?

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- To present a capstone design project focused on microelectromechanical systems (MEMS), specifically accelerometers.



# Outline

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- **The Need**
- **The Project**
- **The Participants**



# The Need

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- **Do you have a smartphone?**
- **Do you have a Wii?**
- **Do you have a nuclear submarine?**
- **All of these things need to know which way and how fast they are moving, though the precise requirements for measurement change with the application**
- **The market for devices which can self-sufficiently determine their motion/position at the human scale is growing**



# The Project

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- **Sandia has manufactured a batch of accelerometers that have not been characterized**
- **Goals**
  - **Characterize the performance of these raw sensors**
  - **Evaluate their potential in the context of human motion measurement**
  - **Provide design recommendations to improve performance**



# The Participants

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- **ASU**
  - **Electrical Engineers**
  - **Mechanical Engineers**
  - **Design Engineers**
  - **Systems Engineers**
- **Sandia National Laboratories**
  - **Hardware**
  - **Technical expertise when necessary**
  - **Educational seminars**