Where would you want this robot or see a need for it?

- Indoors
- Single-level, no need for stairs or elevators - however keep in mind for future updates
- No obstructions or room-dividers, completely flat
- Robot in front of person
- Stay out of bathrooms (No high-humidity environment)

How close do you want the robot to be to you?

- Further away, a few strides
- Don't want to walk into it

How much are you looking to pay for this?

- Unlimited
- Might be nice to keep around the same cost of walkers, canes

What size or shape would you want?

- Carrier in front, keep walkers or books
- Small shopping cart size, two level ones
- Weight should be able to withstand accidental bumps

How would you want it to intervene? What would be most effective?

- Handle or railing to grab on to, similar to shopping cart railing
- If robot senses obstacle warn user (wishlist)
- Cushioning would be nice-- water bottle coaster type surfaces
- No abrasive surfaces

How would you want it to proceed if it misses the fall?

- "Are you okay?"
- Non-responsive, issue out message - make louder based on environment, contact EMS personnel
- Call 911 and contact family member?
- Video services would be good, show person in state

What are your concerns about data privacy, storage, and what data is shared?

- Nah for video

What other movement assistance besides fall intervention would you like?

- Nope, SHOULD NOT BE INTRUSIVE
    - Not too large in size, limit to shopping cart size

How would you like the robot to interact with you outside of physical assistance?

- Wish-list: move away from home use to grocery store, feed it things to buy or give it places to visit, calendar reminders
- Touch screen display - not laptop but bigger than a phone (10 inch)

What noise level can you tolerate?

- As long as it's no louder than normal conversation, doesn't impede normal speech levels
- In future, adjust with outside environment

What speed would you like the robot to move?

- Evaluate walking speed, keep pace with that
    - Learn from behaviors
        - Carrying backpack = walking slower

- Robot go into a stationary position, observing when in a certain area

How would the robot turn on and off?

- Always be on

How do you want to log into the robot? Through what interface/process?

- Keyboard and screen, touch screen
- Just customized to the user
    - wishlist -- training phase, customize to the human

How would the robot charge?

- Notify needs to be charged
- Below 10% charge - half an hour time frame
- Swap out a battery-- no interruption in operation, replace battery

Analyze movement, respond to movement as needed with arm, interface to interact with (secondary)
***FULLY AUTOMATED
Primary task: robot that reacts to movement
Future: fully-assistive, deals with natural environment, monitor vitals/long-term analysis of the person's health (optional products for the person to wear), sync with other devices such as FitBit

- General
    - **Where** would you want/see a need for this robot?
    - What **size/shape**?
    - **Turning on/off**- how?
    - What does robot need to withstand?
    - Weight limit?
    - How gentle does the robot need to be, esp considering elderly bodies?
    - **Charging**
        - Does robot self-charge
        - When does robot charge
        - How often to charge?
        - How much of a warning?
        - Swap out batteries?
    - **Cost**
- User Input and Personalization
    - **Log in to robot?**
    - **Interface?** Touch screen/keyboard?
    - Recognize user to sign in?
    - Facial recognition?
    - Multiple accounts?
    - Guest account option? (don't save data?)

- **Data Privacy**
    - Your face?
    - Data storage?
        - How long is data kept
        - What data is kept
    - Non-body point data?
    - What's communicated to outside world?
    - Security measures?
    - Software updates
- **Interfacing/Interacting with User**
    - Does robot speak?
    - Does robot make noises?
- Robot Movement
    - **Speed of movement**
    - Where it follows (in front, behind, at side)
    - How it addresses fall cases/ which ones we can promise(?)
    - Self-righting movement (balance)
        - Inform user that it is unable to function
        - Wish list item
    - Stairs(?)
    - **How close and far?**
    - **Noise associated with movement/operation**
    - Use like smart walker
        - Can person take over and maneuver it
        - **Several modes to activate, different levels**
        - Gesture /communicate to call robot over for walking assistance
        - Sense pressure, drive for you
- Physical support intervention action
    - **How do you want to be supported?**
    - How do you need to be supported?
    - What if catch person but can't move from it?
        - Roll ankle?
        - Broken bone -> fall?
- **Post-intervention support actions: How would you want it to intervene? What would be most effective?**
    - Determining injury?
        - Every fall, we call
        - Person gesture/communicate injury and need for help/ or lack thereof
            - Would they accurately report state of being?
        - Person unresponsive = yikes
        - Is robot expected to help up? Is that medically safe?
    - Call 911?
    - Call a doctor?

        - Phone call, less invasive
        - Skype in, have doctor be able to see person(?) to evaluate situation
    - Alert medical professional?
    - Alert family member/caretaker?
    - Ask for assistance?

- Should there be a login/security for the robot?
    - If so, how should it function?
    - Incorrect credentials - how is it handled?
- Facial recognition intertwined with the kinect's data?
    - Will the robot only work for certain people?
    - Multiple accounts?
- Should robot be used with animals or small children
- Should robot be equipped with warning lights/alarms
- Should robot be able to self-right (balance)
- Should we have any other protocols (other than imbalance) like fire, danger to person, flooding, weather emergency.
- How should robot charge itself
- How should robot handle stairs/uneven ground
- Should robot be able to be turned off
- Should robot monitor vitals/personal information to make informed decision
- Should robot retain location/behavior information
- Should robot sync with an online database
- Updating robot software
- Should robot retain contact information of family in case of emergency
- Can robot sync with smart home appliances
- How should robot communicate with user
    - Will we have a GUI?
    - Will the robot be designed as a character?
    - Will it communicate verbally?
- How should robot perform maintenance
- Should robot prevent user from attempting to traverse terrain it cannot traverse
- Should user be able to sit on the robot
- At what distance will the robot be from the user
- Should the robot indicate to the user that they are walking abnormally
    - If so, how should it do so?
- How should robot respond if user falls and robot fails to catch them?(call 911?)
- If calling 911, what does it say? (Does it have voice capabilities?)
- What does robot respond to?
- Does robot only intervene on own accord?

- Can user gesture to robot for action (ex. User does ‘come here’ motion, robot comes forward)?
    - Nah - for now
    - Can you verbally get the robot to do certain tasks?
        - Can the robot understand other languages??
- Is robot connected to outside world, ex doctor or 911?, life alert style
- Can it upload data to a doctor’s office?
    - Privacy - can user opt out?
    - What happens to the data collected?
- How much noise will the user tolerate?
- How will the robot handle busy environment - outside vs inside home?
- STAIRS
- What other uses would the user want out of the robot
    - Storage??, seating??
    - French braiding
    - Henna
- Should this be more tech or companionable
- How can we make this