Wheelchair exercise

• Test in 2 weeks.
• We will supply wheelchairs (thank you Andy!)
• Spend 1 day in wheelchair during the week
• Keep to your normal schedule.
• If you cannot get to a place with wheelchair, note the issues
• Write 1-2 pages on experience
Lecture 3

- Discussion and Choice of Projects
- Team Formation - three students per team
- Team Rules
- Team Management
Projects

• Great ideas suggested!
• Reviewed by Andy, Meera, Nora, Jason, and Ken
• Chose the ones we thought were the best-doable, and can be done in time and will make a big difference to the user
• You can now choose the team you would like to be on with Total Team size 2 or 3
Candidate Projects Selected

1. Clip-on wheelchair accessories
   Jeff Biasmark
1. Wearable early warning system for Cataplexy
   Anne Sandra
1. Mobile Arm support
   Jimmy Haojie
1. Assistive wheel and next generation Caretaker’s wheelchair
   Ellen, Cindy, Lia
1. Self-stabilizing Cane for fall prevention
2. Sandra Liu Maegan Tucker
3. Next generation pressure sore prevention
4. Sandra Liu Maegan Tucker
5. Attachable handle for transfer from wheelchair to car
Team Formation Process

• Consider these posted ideas
• Write down your name on your 1,2,3 choice on sheets
• We will select the Teams
• Obviously, the people who suggested project get their first choice for their project
• We will announce the Teams today
• Selection Time!

• Instructor Breakout Time to select teams!
First steps with your chosen projects

- Get feedback from Potential Users/Professionals in field
  - Andy will help!
  - Villa Gardens Dmitry Estrin
destrin@frontporch.net

- Supplement with secondary Research. If you need help in locating papers the Caltech Library can help
- In research, validate or question your choice of project
- If validated, working with users will also challenge initial assumptions as to optimum solutions.
Preliminary research due Jan 30

From Each Team

Have you spoken to someone who can critique project?

What have you learned from the conversation?
Hypotheses

After your initial research, Write down

1. Vision Statement
2. Hypotheses
Vision Statement- some thoughts

• Our product will serve. . .
And produce an improvement in ability to. . .
Resulting in an improvement of. .(%) .to perform the . . . function. This will enable the user to perform functions such as. . .

• We estimate that the product will help. .
.people world-wide
Hypotheses some thoughts

- Some assumptions as to what will be accomplished by the project and why

The project will be accomplished by the end of the quarter providing a working model

Vision Statement and Hypotheses due Jan 30
Teams
1. Why are Products Developed by teams?
# Breakout session

2. In your experience,

<table>
<thead>
<tr>
<th>What Works? – the best things</th>
<th>What Doesn’t? – the worst things</th>
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Why are products developed by teams?

- Complexity
- Challenge ideas
- Change direction
- Can specialize
- Division of labor
Everyone has worked on Teams before
Then, in your experience

• What worked- what were the best things that happened?
What didn’t work?

- Missed deadlines
- Communication
- Timing
- Personality
- Organization
- Non-unique solution - need alternatives
Why are products developed by teams?

- Complexity
  - Skill specialization
  - Diversity
- Parallel Processing
  - Workload
  - Speed
- Insight
  - $1+1=3$
  - self-correcting
What are some of the negatives?

• Complexity
  – Many interactions amongst people require some effort to “manage”
  – Communications
• Teams can break down
• Possibility of “Groupthink” overwhelming the lone independent thinker
• Possibility of Dictatorship
What are some of the characteristics of a good team process?

• Clear delineation of responsibilities
• Generate many ideas
• Writing down clear goals
• Effective communication of progress, and challenges
• Deadlines
• Clear meeting dates and times, good attendance
Some Characteristics of Successful Teams

• Leadership
• Commitment
• Integrity
• Common purpose
• Behaviors
  – respect
  – pitch in
  – delegate
• What else?