

January 17, 2017



# ENGR110/210

## Perspectives in Assistive Technology



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Instructor







# Individual Projects - Durga & Kevin



- ▶ Consider the these options:
  - ▶ Assistive technology topic
  - ▶ Paper design of an assistive technology device
  - ▶ Work of art
  - ▶ Aftermarket aesthetic, functionality, usability design
- ▶ Interview an individual with a disability. This could include: a family member, a friend, a classmate, a community member attending class, or others that I can suggest
- ▶ Report on their lives, challenges they have faced, successes they have achieved, desires for their future, assistive technology they use, and problems they have experienced with them.
- ▶ Meet with Dave to agree on project





# Available Projects



- ▶ Add-a-Sock Project
- ▶ Grip Sense Project
- ▶ Hybrid Body-Powered Harness
- ▶ Project Dance Therapy Project
- ▶ Paddle Project
- ▶ Customize Abby's Scooter Project
- ▶ Hand Grasp Project
- ▶ Get a Grip Project
- ▶ Wheelchair Backup Monitor and Alert
- ▶ Enhanced bed control for veterans with SCI
- ▶ Enhanced access to touch screens
- ▶ Pickup Sticks Project
- ▶ Project employing the Leap Motion Controller
- ▶ Creative Expression
- ▶ Designing Your Afterlife
- ▶ Student-defined projects



# Team Project Selection Policies



- ▶ Form a team of three
- ▶ Teams of less than three are ok only if all other students who have indicated a preference for the project are members of other teams
- ▶  $(\# \text{ of students working on team projects}) / 3$ 
  - ▶ Remainder of 1 = one team of 4 or two teams of 2
  - ▶ Remainder of 2 = one team of two
- ▶ Not all projects can support multiple teams
- ▶ Projects are reserved on a “first-to-submit” basis



# Team Project Selection Policies



- ▶ Ok for more than one student team to work on some of the team project suggestions
- ▶ Ok for teams to share background tasks
  - ▶ Driving to the facility
  - ▶ Interviewing project suggestors
- ▶ Each team must address a separate problem or pursue a different solution





# Team Project Selection Policies



Since there is no guarantee that other students will have the same project interests or that your preferred projects will still be available, you should be prepared to:

- ▶ convince others to work with you on one of your selected projects
- ▶ consider working with another student on a project he/she has chosen
- ▶ keep an open mind



# Team Member Solicitation

- ▶ Teams looking for a third member
- ▶ Student looking to join a team of two



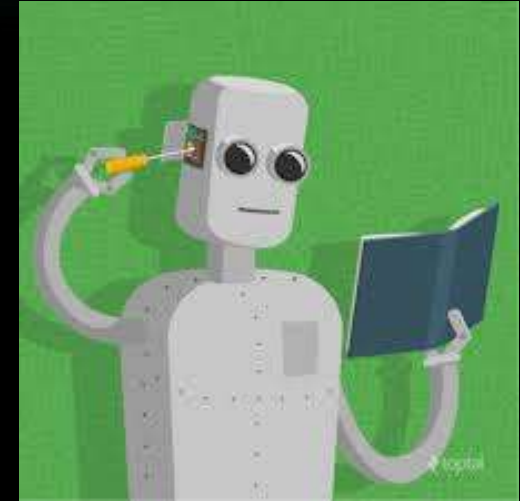
# Engineering Design Process



- ▶ Identify the problem
- ▶ Understand the problem (empathy & ethnography)
  - ▶ Talk to users and stakeholders
  - ▶ Research what has already been done and why it hasn't fully solved the problem
  - ▶ Consult with experts
- ▶ Determine the need (a judgment)
- ▶ Brainstorm many design concepts
- ▶ Select top concepts
- ▶ Fabricate, test, evaluate, **quickly** repeat until time or \$ runs out
- ▶ Report and demonstrate your results
- ▶ Reflect on your project experience

# Engineering Design Process

- ▶ Does not include:
  - ▶ Building to another's vision
  - ▶ Making incremental improvements
- ▶ Utilize project resources and team skills
  - ▶ PRL and Room 36 (equipment and TAs)
  - ▶ Person who suggested project
  - ▶ Course resource people
  - ▶ Classmates
  - ▶ Dave
- ▶ Make and justify all your project decisions



# Project Documentation

- ▶ Lab notebooks are not required
- ▶ Diary for your Individual Reflection
- ▶ Photos and short videos strongly suggested
  - ▶ Working with a person with a disability
  - ▶ Illustrating your design process
  - ▶ Prototypes





# Work with Diligence

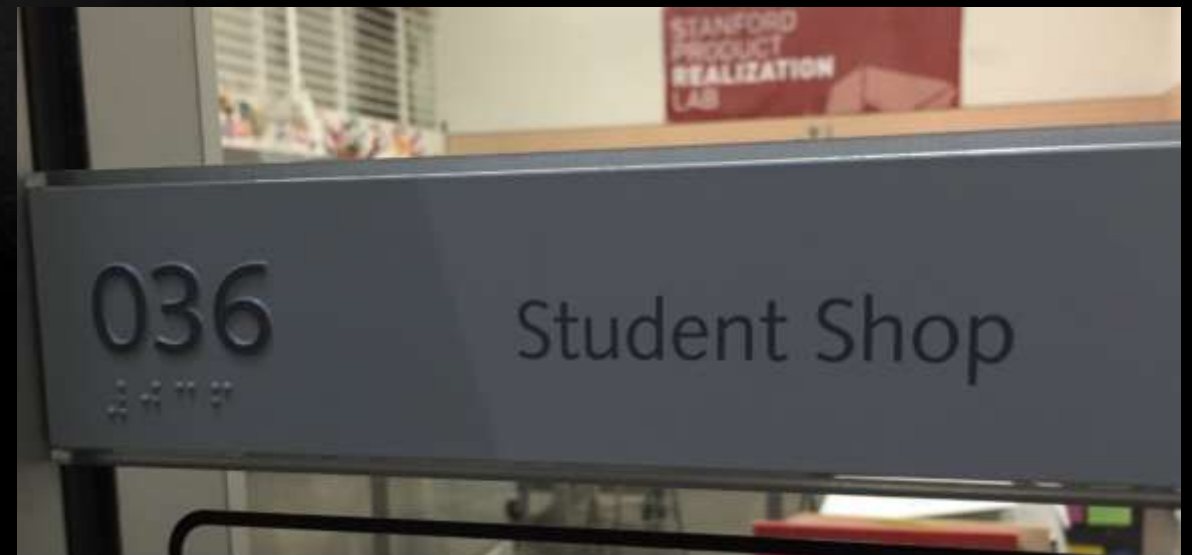
- ▶ Time is your team's most precious resource
- ▶ 7 weeks of class left to work on your projects
- ▶ Mid-term team presentations in 4 weeks



# Miscellany



1. Weblinks, videos, and photos linked from lecture webpages
2. [Anonymous Suggestion Box](#) for comments and rhetorical questions
3. PRL Safety Orientation & Shop passes
4. Last bits:
  - ▶ Remembering names
  - ▶ On your team
  - ▶ On your side
  - ▶ Good grades



# Project Teams



- ▶ **Art Tools Project**
- ▶ **Robotikids**
  - ▶ **Deo**, Darrel Rohit
  - ▶ **Lopez**, Francisco Gabrielle
  - ▶ **Kolbehdari**, Ehson Sedaghati



# Project Teams



- ▶ **Magical Bridge Playground Project**
- ▶ **All the Lights**
  - ▶ **Ron**, Daniel
  - ▶ **Sambrick**, Maria Nichole
  - ▶ **Shah**, Naomi Chetan



# Project Teams



- ▶ **Magical Bridge Playground Project**
- ▶ **Le Joy Masters**
  - ▶ **Carney**, Leo Pastorfide
  - ▶ **Nevills**, Zach
  - ▶ **Reyna**, Javier Alan





# Project Teams

- ▶ **Plugs for Molly Project**
- ▶ **Team JAR**
  - ▶ **Gurevich**, Anna Caitlin
  - ▶ **O'Rourke**, Ryan Daniel
  - ▶ **Pedersen**, Jon Lee



# Project Teams



- ▶ **Orthotic Rebound Shock Project**
- ▶ **Legtastic**
  - ▶ **Lai**, Paul Truc Chinh
  - ▶ **Singh**, Navjot
  - ▶ **Trac**, Nick Lam



# Project Teams



- ▶ **Authoring Grade School Lessons on Disability and/or Assistive Technology**
- ▶ **Nearpod X**
  - ▶ **Cabral**, Felipe de Almeida Castanho
  - ▶ **Hu**, Daniel Alexander
  - ▶ **Jackson**, David Alexander



# Project Teams



- ▶ Add-a-Sock Project
- ▶ **Sock It to Me!**
  - ▶ Christine Chang
  - ▶ Andrew Austin Lee
  - ▶ Kat Barbara Pfleeger



# Project Teams



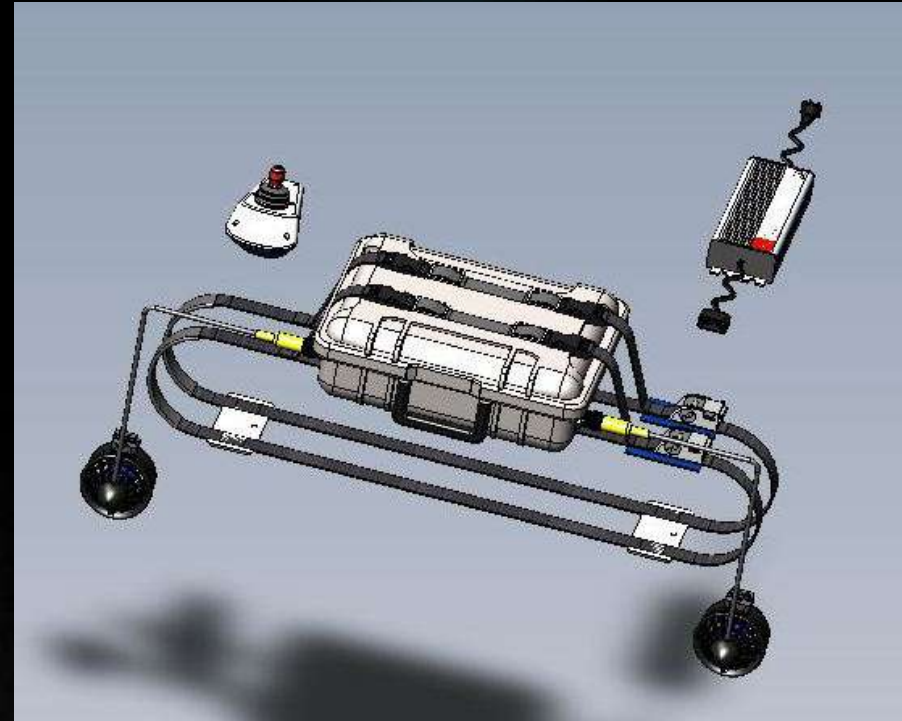
- ▶ Project
- ▶ **Team Name**
  - ▶ Student 1
  - ▶ Student 2
  - ▶ Student 3





# Other Items

- ▶ Paddle Project Description
- ▶ Letters of Recommendation
- ▶ Self-directed
- ▶ Project budget - \$200
- ▶ Class participation



# Thursday, January 19th



Bridging the Gap between Consumers  
and Products in Rehabilitation Medicine

Deborah E. Kenney, MS, OTR/L

Stanford University

VA Palo Alto Health Care System

Foothill College



# Today



Needfinding and Assistive Technologies

Gayle Curtis - UX Design Consultant



# Short Break

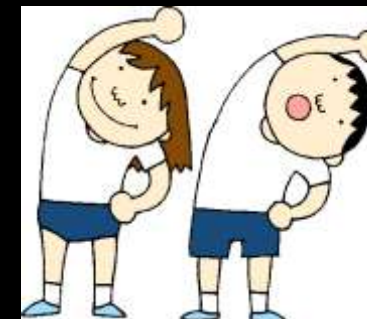
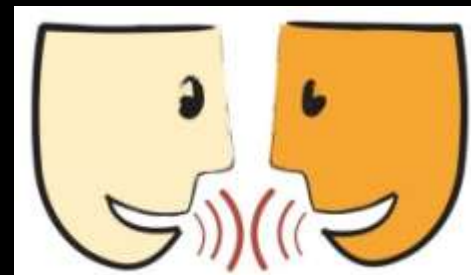




# Break Activities



- ▶ Sign attendance sheet
- ▶ Grab a cookie
- ▶ Stand up and stretch
- ▶ Take a bio-break
- ▶ Text message, web-surf, email
- ▶ Talk with classmates
- ▶ Reflect on what was presented in class



# Laptops Galore

