

March 7, 2019  
Wheelchair Fabrication in Developing Countries



# ENGR110/210

## Perspectives in Assistive Technology



David L. Jaffe, MS  
Instructor

**13**  
**Years**



# Tuesday's Film Screening



A Day with Danny  
2015 - 11:32

Please email any comments to me -  
I will forward them to the film maker.



Fixed: The Science / Fiction of Human Enhancement  
2014 - 61:00



# Food & Drink Signup



For everyone:

- Food & Drink Signup



End-of-Term Celebration  
Food and Drink Signup  
Thursday, March 14<sup>th</sup>  
*Choose one burrito and one drink item*

Burrito								
Veggie			Chicken			Beef		
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Drink								
Regular Coke			Diet Coke			Water		
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# Week 9



- Finalize fabrication, perform user testing
- Focus on Tuesday's team presentation
- Project demonstrations next **Thursday - March 14<sup>th</sup>**



# Final Presentations - Tuesday



- ▶ Cover your entire quarter's effort
- ▶ Tell a complete story, but focus on what you have achieved since the mid-term
- ▶ Emphasize how your project addressed the problem
- ▶ **7 minutes, no demos, no audience questions**
- ▶ Show your prototype in your slides - point to features
- ▶ **Email PowerPoint slides or url to Dave by noon Tuesday**
- ▶ One video of prototype in use
  - ▶ Upload video to YouTube and include its link in your slides
- ▶ Be prepared to evaluate other teams' presentations
- ▶ Dress professionally



# Dress Professionally

- ▶ No t-shirts, sweatshirts, hoodies
- ▶ No flip-flops, sandals
- ▶ No shorts, jeans, holes in pants
- ▶ No baseball or stocking caps



Mark Zuckerberg

“Each item of clothing makes a statement about who you are”

“Dress for the grade you want”



No Jacket  
Required





# Perform Professionally

Starting now, you will be evaluated as a professional, no longer as a student

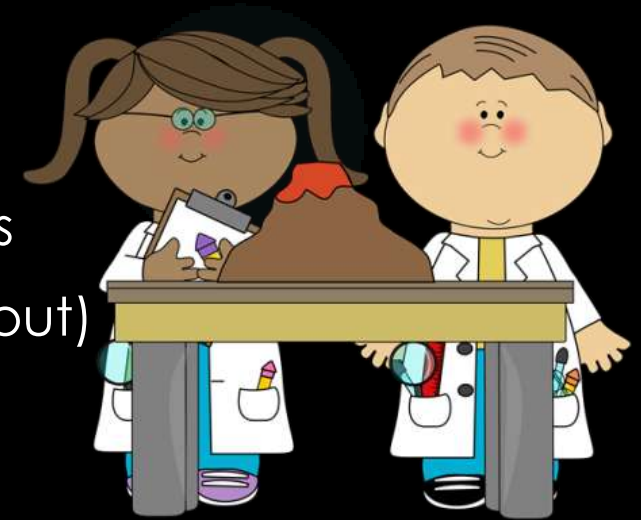




# Project Demonstrations - Thursday

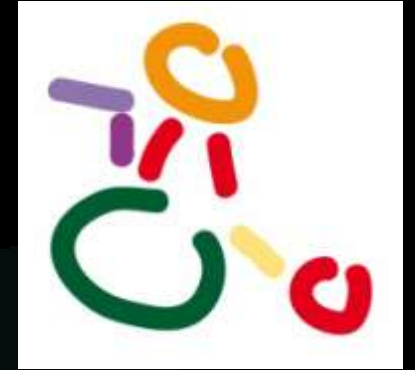


- ▶ Bring all prototypes to class
- ▶ Meet in classroom to fill out a course evaluation form
- ▶ Project demonstrations in classroom
- ▶ No posters or handouts - informal “trade show” presentations
- ▶ Demonstrate prototype’s functionality (make sure I check it out)
- ▶ Check out other teams’ projects
- ▶ Burritos & drinks
- ▶ Community members attending
- ▶ Invite project suggestors, users, friends who contributed to your project’s success
- ▶ Bring laptop to show additional videos and images of your process



# Project Considerations

- ▶ Your prototype should be functional, but not necessarily ready for market
- ▶ Contingency plans if things don't work out
- ▶ Add a team or Stanford logo
- ▶ Never apologize for what you did or what you were not able to achieve
- ▶ Mention future plans
- ▶ Remember “Everything is a prototype”



# Course Evaluations



1. Dave's in-class evaluation on Thursday
2. Cardinal Course Student Survey ✓
3. VPTL's evaluation - online (on your own)



	Strongly Agree	Agree	Disagree
The instructor had a nice haircut.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The instructor knew how to cook.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The instructor had a good singing voice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shaving cream was used.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dogs were permitted in class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The instructor had a masculine nose.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>





# Final Report



- ▶ Cover your entire quarter's work
- ▶ Include material from mid-term report
- ▶ Consider mid-term report mark-ups
- ▶ Due week of March 18th





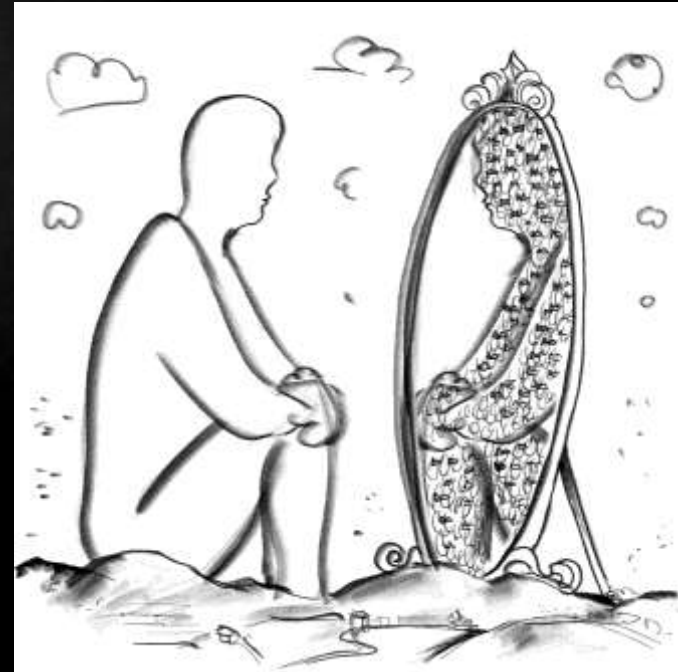
# Individual Reflection



- ▶ How you felt about your course, project, user, team experience
- ▶ Due week of March 18th

We do not learn from  
experience... we learn  
from reflecting on  
experience.

- John Dewey



# Tuesday, March 12th



## End-of-term Student Team Project Presentations



- ▶ **Elevator Pitch** - Elevator Button Pusher Project
- ▶ **Buckle Up** - Service Dog Harness Buckle Project
- ▶ **Travola** - Danny's Lap Tray Project
- ▶ **Big Three** - Danny's Pick-up Project
- ▶ **Kitty Kat Meow** - Zirpolo Hide-Away Lap Tray Project
- ▶ **Tray-lblazers** - Tray for Tony Project
- ▶ **Abby's Assistants** - Grocery Shopping with Abby Project
- ▶ **Magical Bridge Team** - Magical Bridge Playground Project: Caterpillar
- ▶ **Mean Machine** - Wheelchair Cup & Phone Holder Project

# Pre-Lecture Discussion Topics



- 22 - Ethical / Moral Dilemmas Related to Disability
- 22 - In the News - New Assistive Technology products and research
- 20 - Assistive Robotics - Robotic technology benefitting people with disabilities and older adults
- 15 - Overview of Accessibility - How this design feature relates to products, with many examples
- 15 - Ten Commandments of Making - Adam Savage's Maker Faire video
- 15 - Video Theatre - Watch and discuss videos of new products and prototypes
- 12 - Vintage Assistive Technology - Products and devices from the past
- 12 - The Upside of Failure - Learning from prototypes that didn't work
- 12 - Who is Disabled? - Making a determination with limited information
- 12 - Innovative Marketing Metrics - How we use words to measure and advertise
- 9 - Famous people with disabilities - Focus on TV characters

# Famous TV Characters with Disabilities



Last Season of Big Bang Theory





# Famous TV Characters with Disabilities



**Raj** - Social anxiety disorder, selective mutism,  
and fear of spiders (arachnophobia)

# Famous TV Characters with Disabilities



Marilu Henner

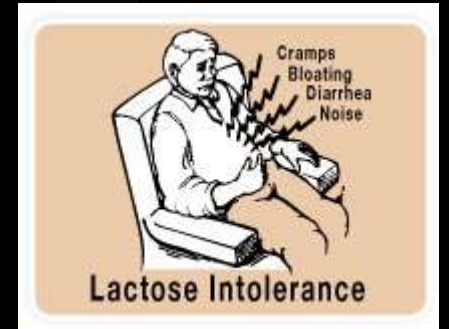
**Sheldon** - Eidetic memory, afraid of dogs (cynophobia) and birds (ornithophobia), mild OCD, "a bit of a germaphobe" (mysophobia), autistic behaviors, but not crazy (his mother had him tested)



# Famous TV Characters with Disabilities



Leonard - Asthmatic and lactose intolerance



# Famous TV Characters with Disabilities



**Howard** - Severe peanut allergy and fear of going into space (astrophobia)



# Famous TV Characters with Disabilities



Penny - No last name!

# Famous TV Characters with Disabilities



Barry Kripke

# Famous TV Characters with Disabilities



Barry Kripke - Speech impediment (Rhotacism)



# Famous TV Characters with Disabilities



Mrs Wolowitz

# Famous TV Characters with Disabilities



**Mrs Wolowitz** - immensely overweight, neck size 43, facial hair, gout

# Today



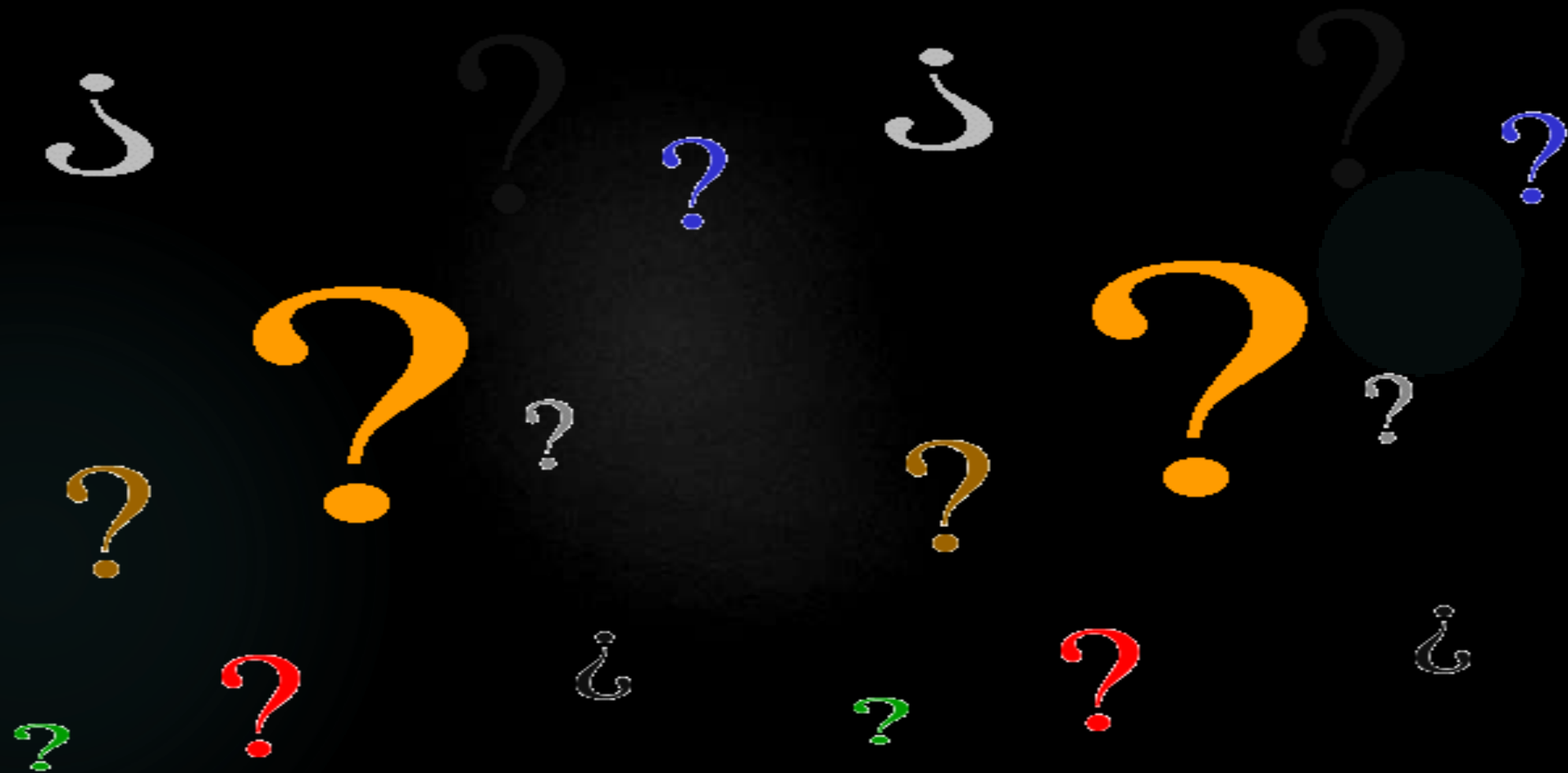
## Wheelchair Fabrication in Developing Countries

Ralf Hotchkiss

Whirlwind Wheelchair International

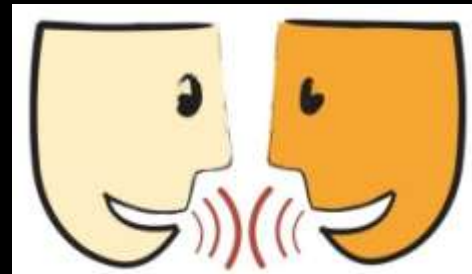


# Questions?



# Break Activities

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



Adjourn



class dismissed





# Laptops Galore



# Time for Questions?



End the class

