February 3, 2026

Robots for Humanity

ENGR110/210
Perspectives in Assistive Technology



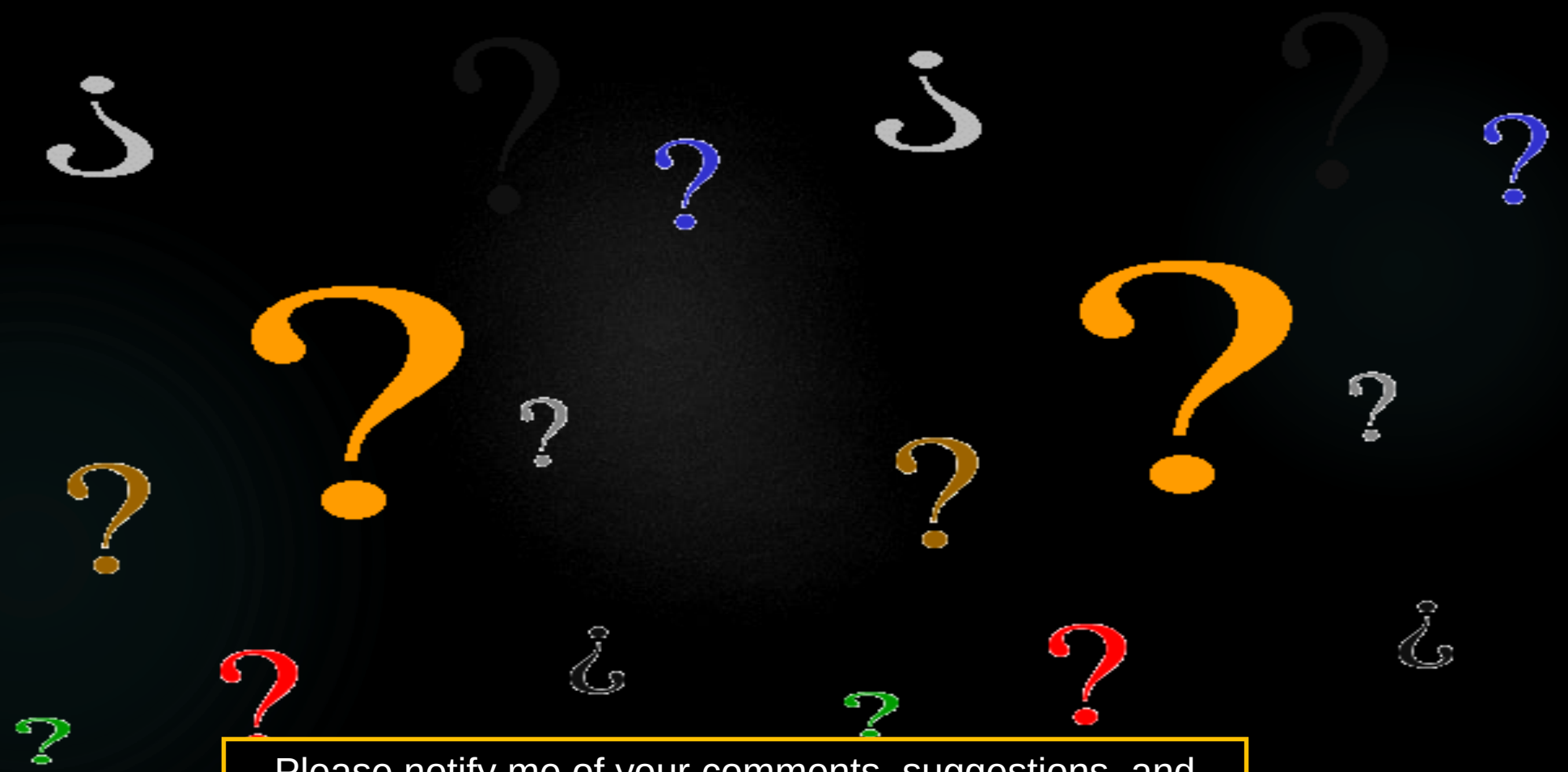


Steve B. Cousins, PhD

Michelle Baldonado, PhD

Stanford Robotics Center

Questions?



Please notify me of your comments, suggestions, and concerns so I can explain / address / correct them.

Miscellaneous Stuff



- Service animals are Assistive Technology
- People with disabilities and older adults can participate in the design process without a background in design / engineering / fabrication
- How many users does an AT company have to interview to ensure that their next generation of products benefit their targeted market of consumers?

Many thanks!



Students working on projects:

- Meeting with me
- Providing progress updates
- Making up missed class sessions

Community members:

- Project partners
- Attending class sessions

Guest speakers:

- Presenting interesting topics

Upcoming class sessions



- Assistive Robotics –
  Monroe Kennedy III, PhD - Thu, Feb 5th
  Drivers' Signup
- Mid-term Student Project Presentations –
  7 Teams - Tue, Feb 10th
- Field Trip to the Magical Bridge Playground – Palo Alto
  Olenka S. Villarreal - Thu, Feb 12th



Team Names

- **K9 Consortium** - Treats for Nathan
- **Pass, Set, Kapow** - Laptray Artwork Easel
- **Subway Surfers** - Obstacle Detector 1
- **One for All** - MBP Attractions 1
- **Curb Scouts** - Obstacle Detector 2
- Sixth Team with No Name - Footshell Project
- **All Play!** - MBP Attractions 2



Students working on Team Projects





- **Connect with project partner**
- "Understand the Problem"
- Brainstorming
- Select Design Concept(s)
- Sketches, low resolution prototypes
- Prepare for **Mid-Term Presentation** and **Report**
- Contact me if you have questions about your project direction
- Weekly – Inform me of project progress
- **Team budget = $200**
- **Mid-Term Reports due Mon, Feb 16th**



Students working on Team Projects
Mid-term Presentations in 7 days!



- Mid-term presentations will be **8 minutes**
- Project title, background, problem, aim, design criteria, "understanding the problem" & brainstorming activities, and selected solution, with **low resolution prototypes**
- **Send Google Docs url to me**, **slides to be run from my laptop**
- Strive to be professional
- Include feeling & emotion & enthusiasm & confidence
- Presentation tips on course website & Week 4 in Review
- Example Presentation & Slides sent in Week 4 in Review
- **Signup Sheet for presentation order available TODAY!**
- **Video presentation by team members not present**

Students working on Team Projects
Mid-term Report



- Mid-term report - 10 to 15 pages of narrative - text and images
- Include legible sketches and photos
- Goal: short, concise, well-written, and highly readable report with few grammatical and spelling errors.
- Report Writing Tips documents **suggested** report features
- Report tips on course website & Week 4 in Review
- Example Report sent in Week 4 in Review
- **Mid-Term Reports due Mon, Feb 16th**

Reminder - Work with Diligence

- Time is your most precious resource
- 7 days until Mid-term Presentations - Tue, Feb 10th
- Outline your presentation & report





Steve Job's Quotes

- "You can't just ask customers what they want and then try to give that to them. By the time you get it built, they'll want something new."
- "Most people don't even know what they want until they see it. So sometimes you must give people what they need, not what they're asking for."




ABLEISM

Inclusive Definition of Disability

"Disability is a normal variation of the human condition." - Gregor Wolbring



Deep inside we're all the same - Styx



Ableism - What is Ableism?



- Ableism is a form of bias / discrimination that asserts or suggests that able-bodied people are superior to those with disabilities. [Ageism - older adults]

- Ableism is a system that places value on people's bodies and minds based on artificially constructed ideas of normalcy, intelligence, excellence, and productivity.



Stanford-ism

Ableism - Ramifications



- An ableist society treats able-bodied people as the standard for 'normal' living. This promotes unfair treatment towards people with disabilities (and older adults).

- This form of thinking leads to people and society determining who is valuable and worthy based on a person's appearance and/or their ability to satisfactorily [re]produce, excel, and "behave", rather than the quality of their character. [MLK]

- One does not have to be disabled to experience ableism.

Ableism - Solutions



- Education is one keyway to dispel myths and prejudices about the people with disabilities and older adults.
- Language and vocabulary changes are also needed to include everyone in the advancement of the technological world in a genuine, respectful, and humane way.
- Positive examples



Ableism - Language



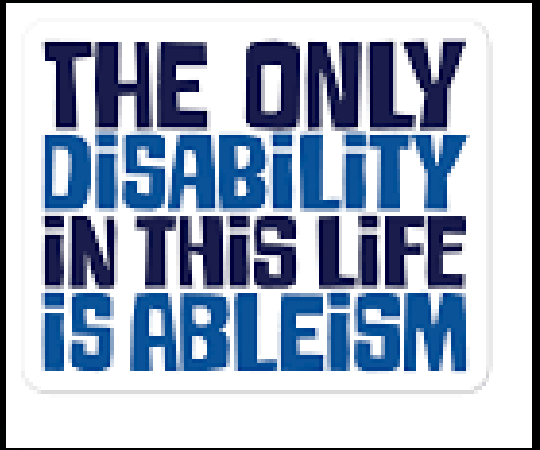
- Disability vs Ability
- “Disability” perceived as a negative term / condition
- Disability = lack of ability = not worthy



Ableism - Future



- Although society and the digital world are becoming more accepting of diversity, discrimination still exists, especially for people with disabilities (and older adults).
- A positive virtual future is set to become progressively more inclusive of people of all levels of ability.
- Reducing ableism is essential in improving the accessibility, benefit, and impact of assistive technologies.



Thursday, February 5th



Assistive Robotics

Monroe Kennedy III, PhD

Assistant Professor of Mechanical Engineering

and, by courtesy, of Computer Science

Stanford University

Today



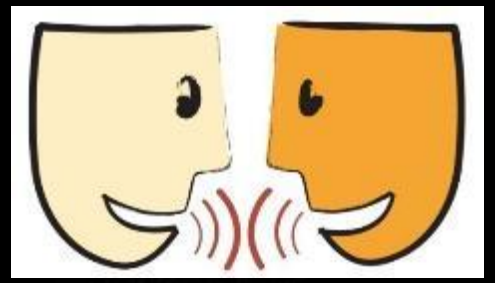


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Break Activities



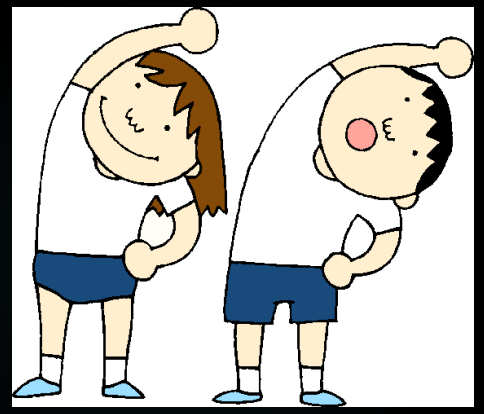




- Attendance sheet
- **Time Slot Signup**
- Stand up and stretch
- Take a bio-break
- Text message
- Web-surf
- Respond to email
- Talk with classmates
- Reflect on what was presented in class









Short Break



