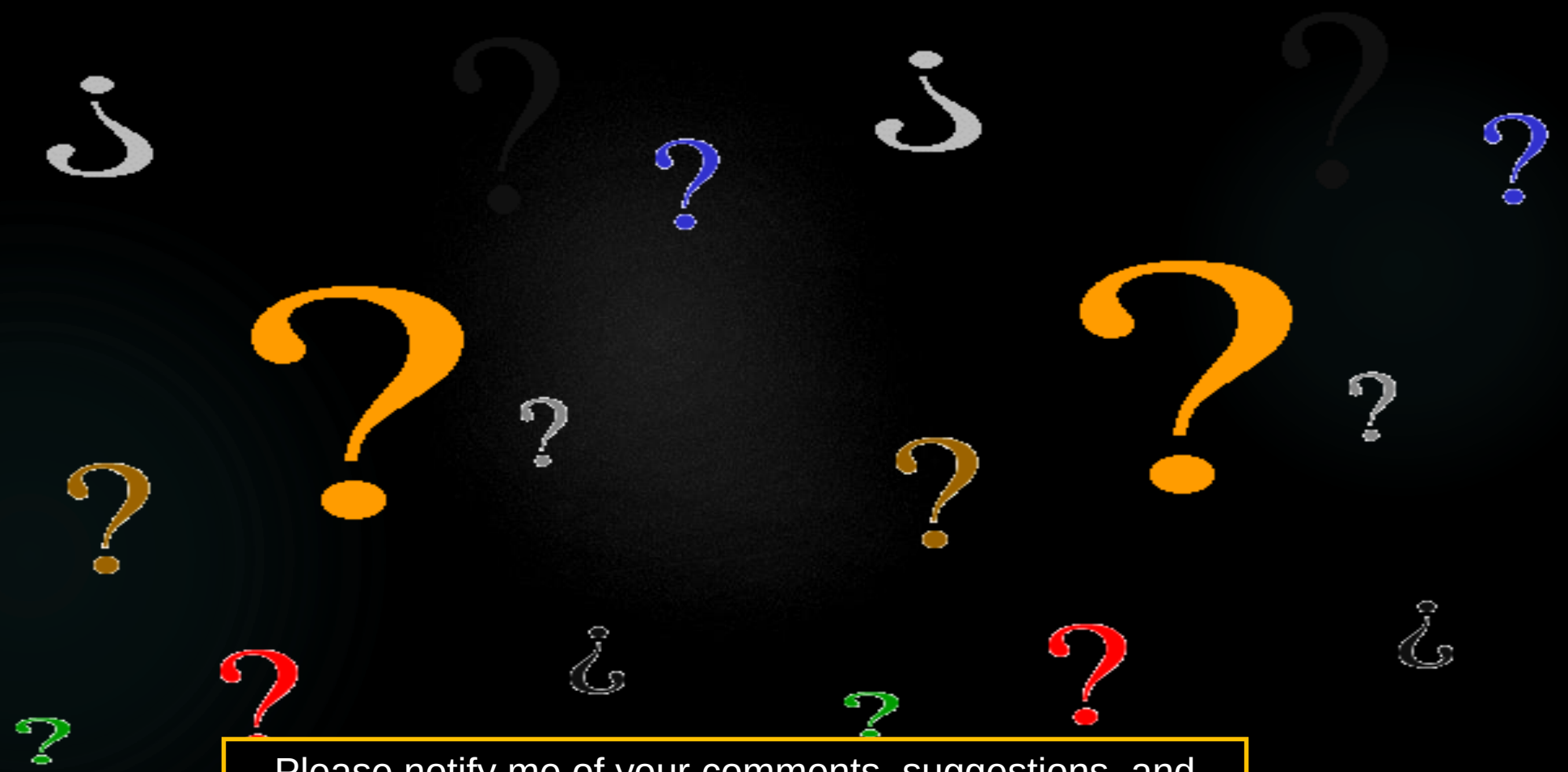
February 6, 2024

Issues of Human Interface Design

ENGR110/210
Perspectives in Assistive Technology

Gary M. Berke , MS, CP, FAAOP
Stanford Medical Center

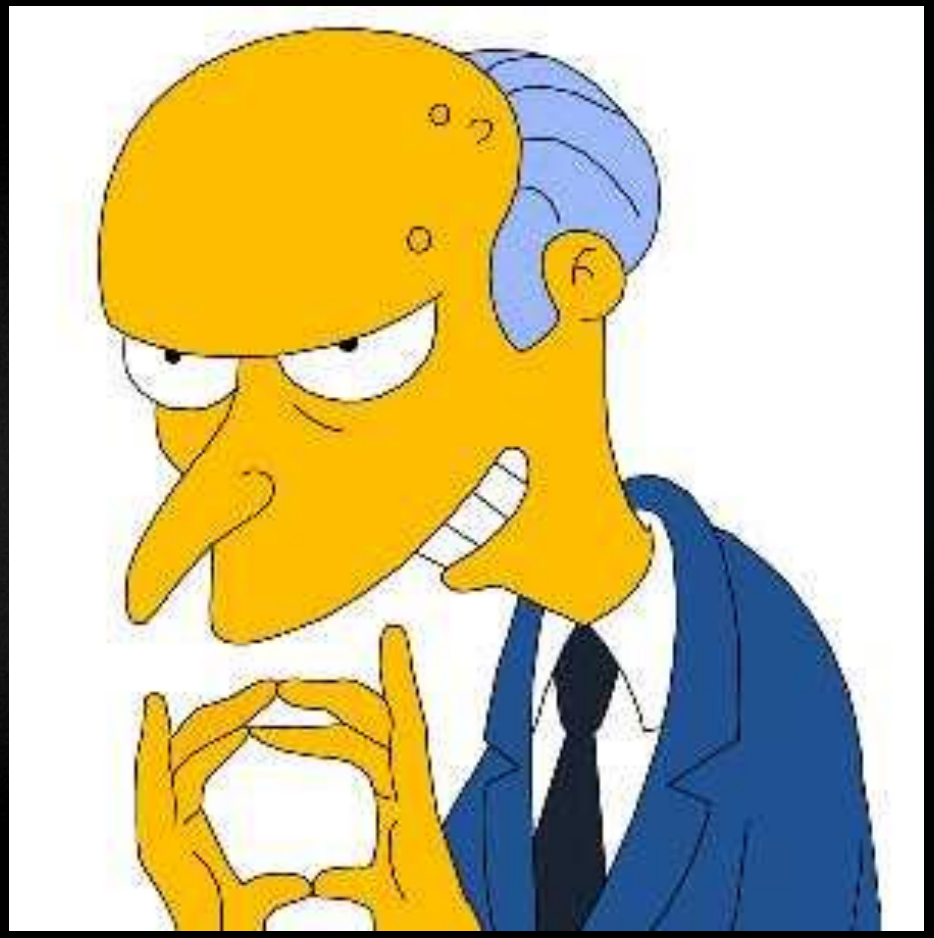
Questions?



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

At what age do you consider a person "old"?

- Average = 57 years
- STD = 18
- N = 19



Top employment choices

- Lockheed-Martin
- Raytheon
- **Stark Industries**
- Nike
- Google (2)
- NBA
- Spotify
- Apple
- Johnson & Johnson
- Tesla
- Nvidia
- Skky Partners
- Hyundai
- Heirloom

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
- How many users does an AT company have to interview to ensure that their products benefit their targeted consumers?

Many thanks!

Students working on projects:

- Meeting with me
- Providing progress updates

Community members:

- Project partners
- Attending class sessions

Guest lecturers:

- Presenting interesting topics

Upcoming class sessions

- Assistive Robotics - Thu, Feb 8th
  Monroe Kennedy III, PhD

- Mid-term Student Project Presentations - Tue, Feb 13th
  8 Teams

- Field Trip to the Magical Bridge Playground - Thu, Feb 15th
  Olenka Villarreal

- Assistive Technology for Persons with Spinal Cord Injury - Tue, Feb 20th
  B. Jenny Kiratli, PhD & Jeffrey P. Jaramillo, DPT

Teams

- Team Re-Creation - Accessible and Inclusive Playground Attractions
- Team ArtSIStive - Creative Expression for Sylvia
- Danny's Dawgs - Dog Kennel for Danny & Korey
- Accessible Basket Solutions - Storage Solution for Danny
- Danny Designers - Laptray for Danny
- Dream Catchers - Accessible and Inclusive Playground Attractions
- Secure the Bag - Accessible Storage Solution for Abby
- WANI - Treats for Nathan

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 - Meet with me to report on project progress
- **Team budget = $300**
- Submit progress reports
- **Mid-Term Reports due Mon, Feb 19th**

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, **to be run from my laptop**
- Strive to be professional
- Include feeling & emotion
- Presentation tips on course website
- Information sent in Week 4 in Review
- **Signup Sheet for presentation order**

Students working on Team Projects
Mid-term Report

- Mid-term report - 10 to 15 pages of narrative - text and images
- Include 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
- Information sent in Week 4 in Review
- **Mid-Term Reports due Mon, Feb 19th**

Students working on Individual Projects

- **Meet with me to approve your project, get information**
- Submit project name
- Contact me if you have questions about your project direction
- Weekly - Meet with me to discuss project progress
- Submit progress reports to me

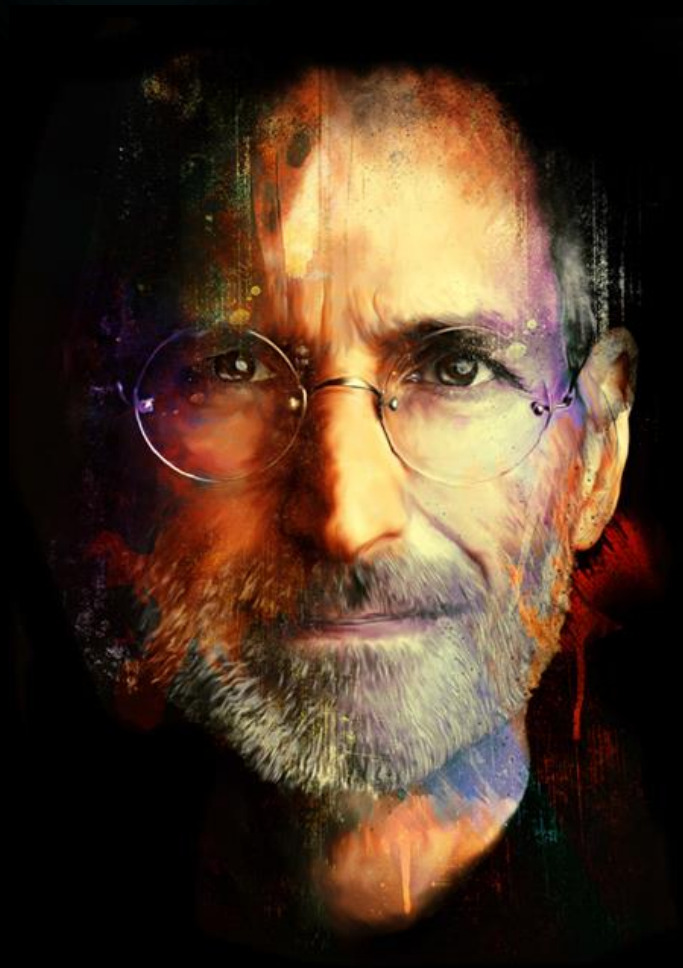
Reminder - Work with Diligence

- Time is your most precious resource
- 7 days until Mid-term Presentations - Tue, Feb 13th
- 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 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.

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

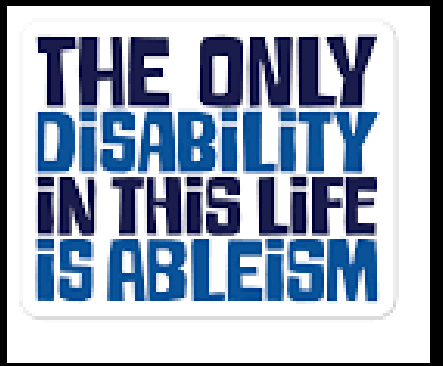
- Education is one keyway to bust myths and prejudices about the people with disabilities and older adults.
- Language and vocabulary changes are also needed to include everyone in the advancement of the technological world in a genuine, respectful, and humane way.
- Positive examples

Ableism - Language

- Disability vs Ability
- “Disability” perceived as a negative term / condition
- Disability = no 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 8th

Assistive Robotics

Monroe Kennedy III, PhD

Assistant Professor of Mechanical Engineering

and, by courtesy, of Computer Science

Stanford University

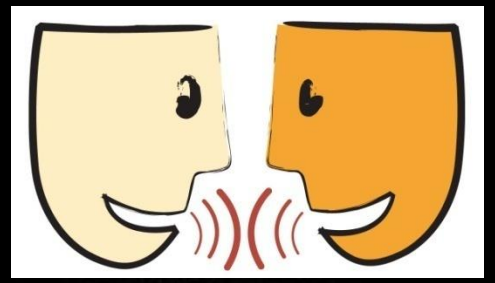
Today

Issues of Human Interface Design

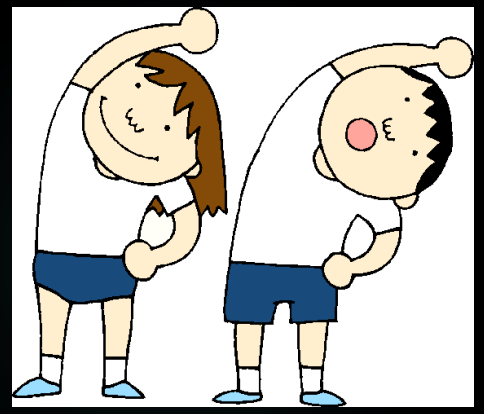
Gary M. Berke, MS, CP, FAAOP

Stanford University School of Medicine

Break Activities



- Attendance sheet
- **Presentation Order**
- **Driver's Signup for MBP**
- 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