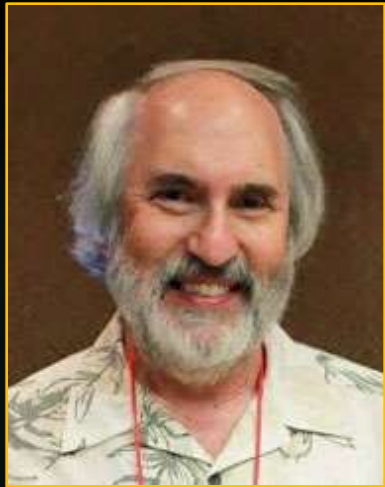


February 12, 2019
The Design and Control of Exoskeletons for Rehabilitation



ENGR110/210

Perspectives in Assistive Technology



David L. Jaffe, MS
Instructor

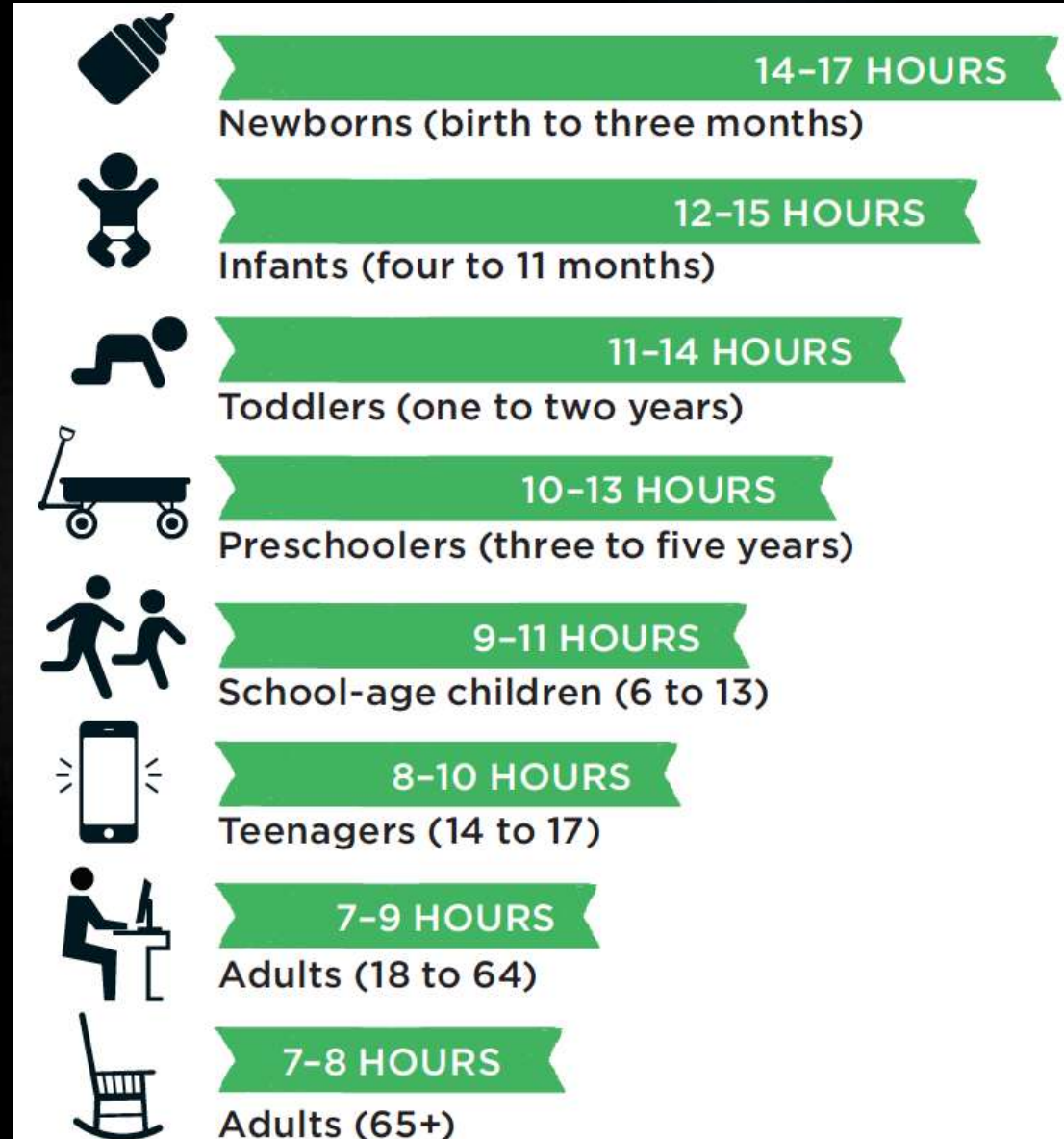
13
Years

Questions?



Hours of sleep

- ▶ Average = 6.63 hours
- ▶ STDEV = 1.05



Field Trip to the VAPA



Human-Computer Interaction Seminar



Seminar on People, Computers, and Design

Addressing Situationally-Induced Impairments and Disabilities in Mobile HCI

Jacob O. Wobbrock, University of Washington

Friday, February 15th

11:30am - 12:30pm

Gates B01

Team Project Presentations



- ▶ Mid-term Team Project Presentations this Thu, Feb 14th
 - ▶ Send me PowerPoint slides or online public link by noon
 - ▶ Do not embed videos in slides, add YouTube link on slide
 - ▶ 7 minute presentations:
 - ▶ Tell the entire story
 - ▶ Be concise, but avoid every last detail
 - ▶ Employ descriptive photos and a short video
 - ▶ Show your prototypes as slide images
 - ▶ Practice for timing, where to stand, etc
 - ▶ Use slide presenter to advance slides
- ▶ Mid-term Team Project Reports due Thu, Feb 21st



Mid-term Project Presentation Order



Mid-term Student Team Projects Presentation Order Signup

Thursday, February 14th

Presentations start about 4:40pm

Time slot	Team Name
1	
2	
3	
4	
5	
6	
7	
8	
9	

“And the first one now
will later be last” - Bob
Dylan, "The Times They
Are A-Changin'”



Note that the order will
be inverted for the final
presentation.

Upcoming class sessions

- ▶ Mid-term Project Presentations - Thu Feb 14th
- ▶ Designing Beyond the Norm to Meet the Needs of All People - Peter W. Axelson - Tue Feb 19th
- ▶ Field Trip to the Magical Bridge Playground - Thu Feb 21st
- ▶ Designing Exoskeletons and Prosthetic Limbs that Enhance Human Performance - Steven H. Collins, PhD - Tues Feb 26th
- ▶ Assistive Technology Faire - Thu, Feb 28th



Work with Diligence

- ▶ Time is your team's most precious resource
- ▶ 4 weeks of class left to work on your projects
- ▶ Mid-term team presentations on Thursday
- ▶ Outline and **practice** presentation



Mid-term presentations -
Thursday, February 14th



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

10 Commandments of Making



Adam Savage took a few minutes on Sunday, May 18th at the 2014 Maker Faire Bay Area to share what he feels are the “10 Commandments of Making”. Braving the somewhat precarious elevated stage of the crowd favorite Life-Sized Mousetrap, Adam addressed the audience with bits of wisdom and jewels of experience. It was obvious from the laughter that many of these insights and observations struck close to home.



10 Commandments of Making



Here is the short version of the commandments according to Adam:

1. Make something
2. Make something useful
3. Start right now
4. Find a project
5. Ask for help, advice, and feedback
6. Share
7. Recognize that discouragement and failure is part of the project
8. Measure carefully
9. Make things for other people
10. Use more cooling fluid!



Thursday, February 14th

Mid-term Student Team Project Presentations



- ▶ **Mean Machine** - WHILL Recharging Project
- ▶ **Magical Bridge Team** - Magical Bridge Playground Project
- ▶ **Abby's Assistants** - WHILL Grocery Shopping Shopping Project
- ▶ **Tray-Iblazers** - Lap Extender Project
- ▶ **Kitty Kat Meow** - Hide-Away Lap Tray Project
- ▶ **Big Three** - Pick-up Project
- ▶ **Travola** - Lap Tray Project
- ▶ **Buckle Up** - Harness Project
- ▶ **Elevator Pitch** - Elevator Button Pusher Project

Today



The Design and Control of Exoskeletons for Rehabilitation

Katherine Strausser, PhD

Ekso Bionics - Principal Controls Engineer

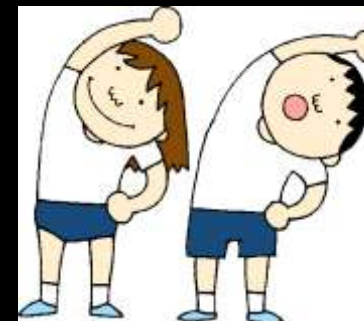
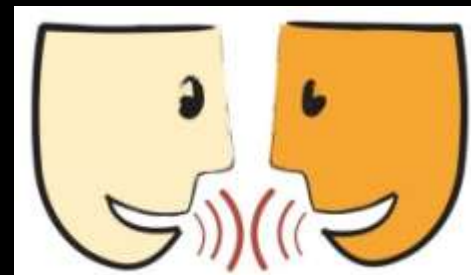
Short Break



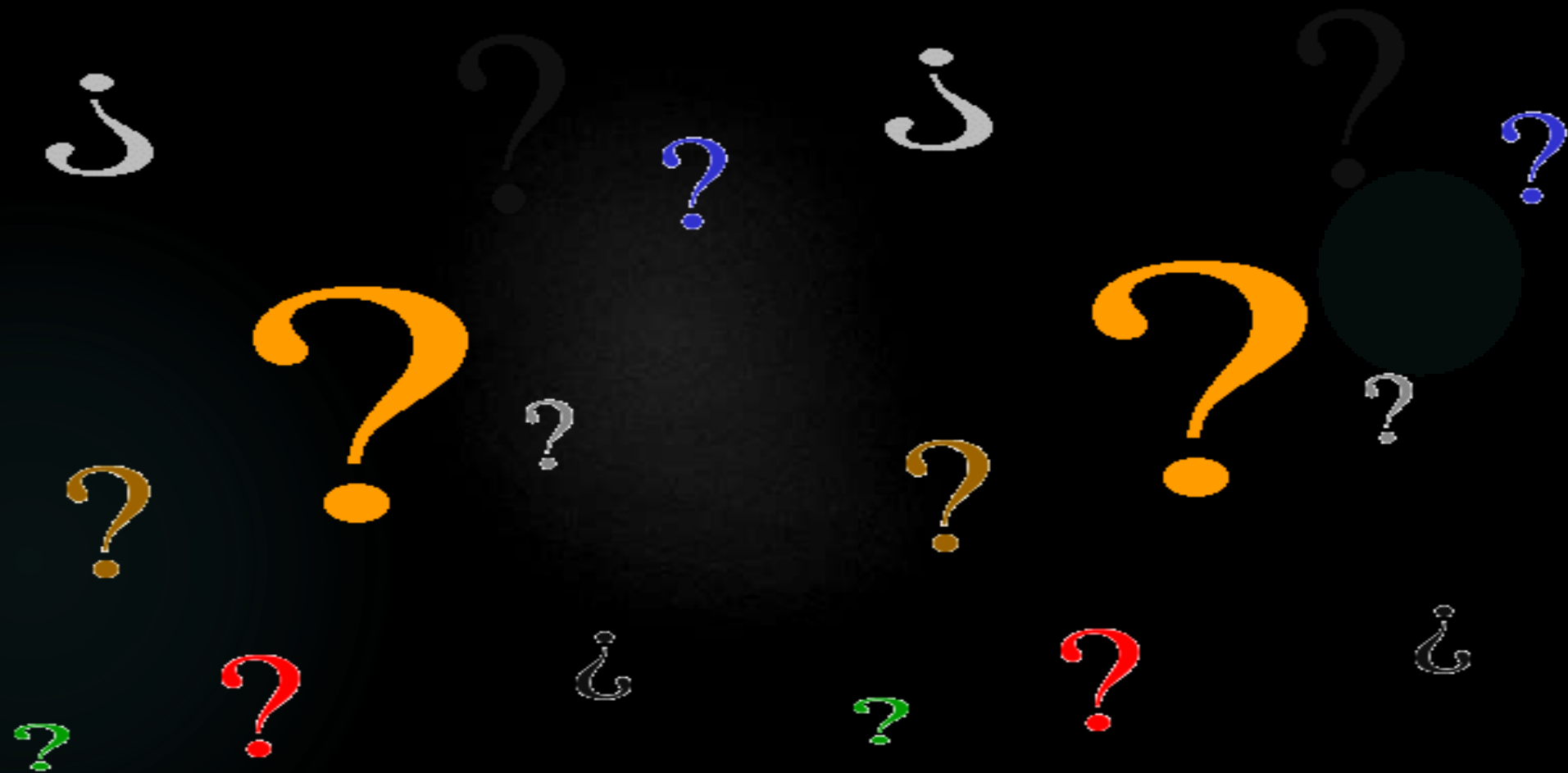
Break Activities



- ▶ 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



Questions?



Adjourn



class dismissed



Laptops Galore



Time for Questions?



End the class

