

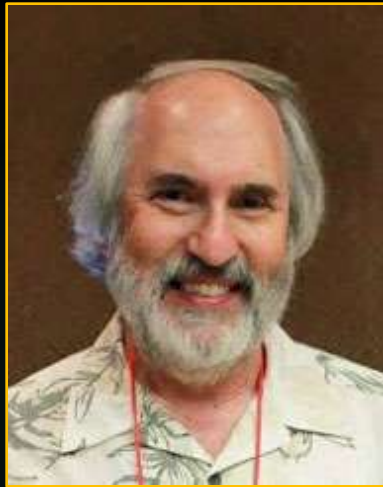
February 27, 2018

Bionic Ears: Cochlear Implants and the Future of Assistive Technology



ENGR110/210

Perspectives in Assistive Technology



David L. Jaffe, MS
Instructor



Cardinal Course Grant End-of-Quarter Student Survey



- ▶ Survey of the community engaged learning component of the course
- ▶ Web-based 10 minute survey
- ▶ Provides the instructor with valuable feedback about the experience of students working on projects
- ▶ Communicates the impact of Cardinal Courses to campus partners and external funders

Important Survey Information



<http://bit.ly/win2018survey>

Definitions of terms unfamiliar to you:

Community-engaged learning - working on your project with people in the local community as a part of your course experience

Community partner(s) - the people you encountered in pursuit of your project, including the project suggestor, healthcare professionals, and individuals with a disability or older adults who identified and pitched the project, provided advice and guidance, or tested your prototypes

Placement site or organization - the facility (or facilities) where you encountered people associated with your project

Service experience - your project experience

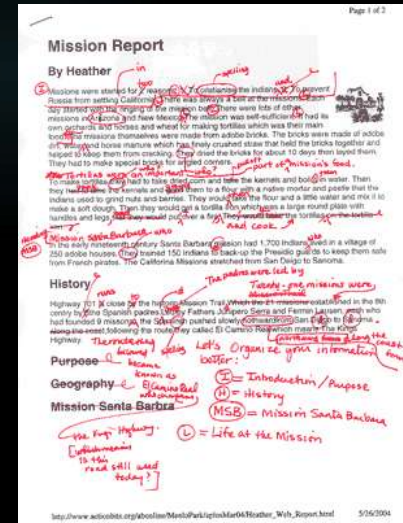
Questions, Comments, Suggestions, or Concerns?



Please notify me of your comments, suggestions, and concerns so I can explain / address / correct them before the end-of-term course evaluation.

Mid-term Report Markups

- ▶ Teams are welcome to meet with me to discuss reports
- ▶ Some are comments, some are suggestions, some are corrections
- ▶ Some relate to syntax, spelling, grammar, format
- ▶ Reports should reflect a **professional** engineering style
- ▶ Not just for my viewing, practice writing professional journal articles and funding proposals
- ▶ An example for your future employer
- ▶ **Reports and presentations are key professional communication skills that must be mastered**



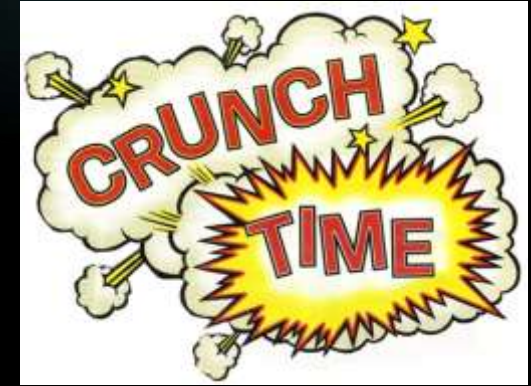
Remaining class sessions



- ▶ **Project Demonstration** - Thu, Mar 15th (outside classroom)
- ▶ **End-of-term Project Presentations** - Tue, Mar 13th
- ▶ **Wheelchair Fabrication in Developing Countries** - Thu, Mar 8th
- ▶ **Film Screening - 4 Wheel Bob** - Tue, Mar 6th (Peterson Atrium)
- ▶ **Assistive Technology Faire** - Thu, Mar 1st (outside classroom)
- ▶ **Bionic Ears: Cochlear Implants and the Future of Assistive Technology** - Today



Week 8



- Continue to work diligently - it's crunch time
- Brainstorm, Select, Prototype, Test, Analyze, Repeat
- Inform me of your team's progress
- Final presentations **two weeks** from today - March 13th
- Project demonstrations **two weeks** from Thursday - March 15th



Tuesday, March 6th



Film screening in
Peterson Building atrium

4 Wheel Bob

- Discussion with the film maker and Bob himself



Excused from Film Screening



- ▶ Teams can request to be excused from the film screening on Tuesday to work on their projects
 - ▶ All team members must be up-to-date on missed lectures
- ▶ *Fixed: The Science / Fiction of Human Enhancement* is available for overnight loan by students



Thursday



6th Annual Assistive Technology Faire

Nine Vendors of Assistive Technology Devices and Services
Outside classroom (weather permitting)

Today



Bionic Ears: Cochlear Implants and the Future of Assistive Technology

Lindsey Felt, PhD

Program in Writing and Rhetoric - Stanford University

Pre-lecture Discussion Topics



- 21 Assistive Robotics
- 18 Ethical / Moral Dilemmas
- 13 In the News
- 12 Ten Commandments of Making
- 12 Video Theatre
- 12 Marketing Terms
- 10 Overview of Accessibility
- 10 Vintage Assistive Technology
- 10 The Upside of Failure
- 8 Who is Disabled?
- 7 Famous people with disabilities



Vintage Assistive Technology



What kind of man owns his own computer?

Rather revolutionary, the whole idea of owning your own computer? Not if you're a diplomat, printer, scientist, inventor . . . or a kite designer, too. Today there's Apple Computer. It's designed to be a *personal* computer. To un-complicate your life. And make you more effective.

It's a wise man who owns an Apple.

If your time means money, Apple can help you make more of it. In an age of specialists, the most successful specialists stay away from uncreative drudgery. That's where Apple comes in.

Apple is a real computer, right to the core. So just like big computers, it manages data, crunches numbers, keeps records, processes your information and prints reports. You concentrate on what you do best. And let Apple do the rest. Apple makes that easy with three programming languages—including Pascal—that let you be your own software expert.

Apple, the computer worth not waiting for.

Time waiting for access to your company's big mainframe is time wasted. What you need in your department—

on *your* desk—is a computer that answers only to you . . . Apple Computer. It's less expensive than timesharing. More dependable than distributed processing. Far more flexible than centralized EDP. And, at less than \$2500 (as shown), downright affordable.



Visit your local computer store.

You can join the personal computer revolution by visiting the Apple dealer in your neighborhood. We'll give you his name when you call our toll free number (800) 538-9696. In California, (800) 662-9238.

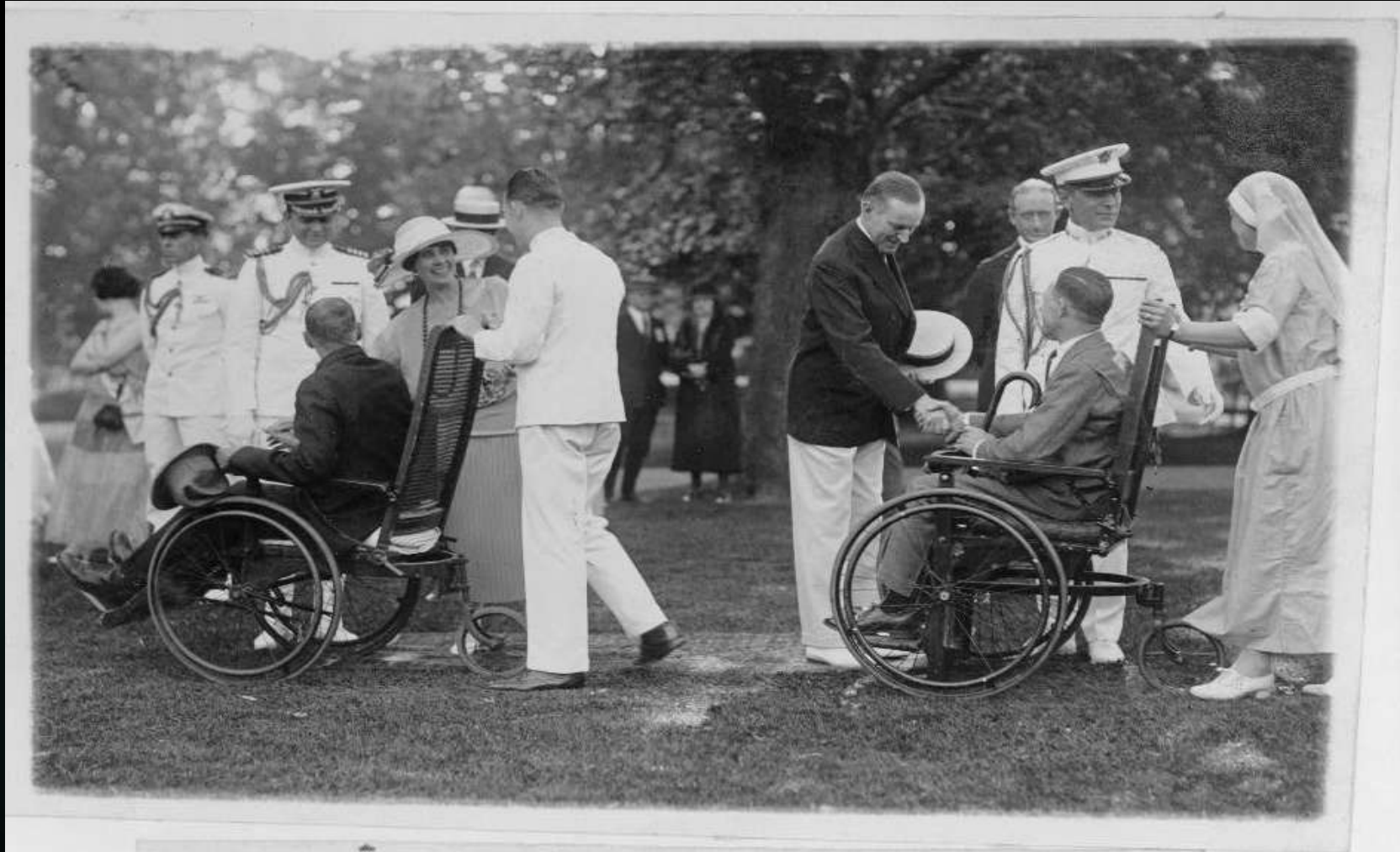
Apple Computer, 10260 Bandley Drive, Cupertino, CA 95014.



Old Wheelchair Designs



Old Wheelchair Designs

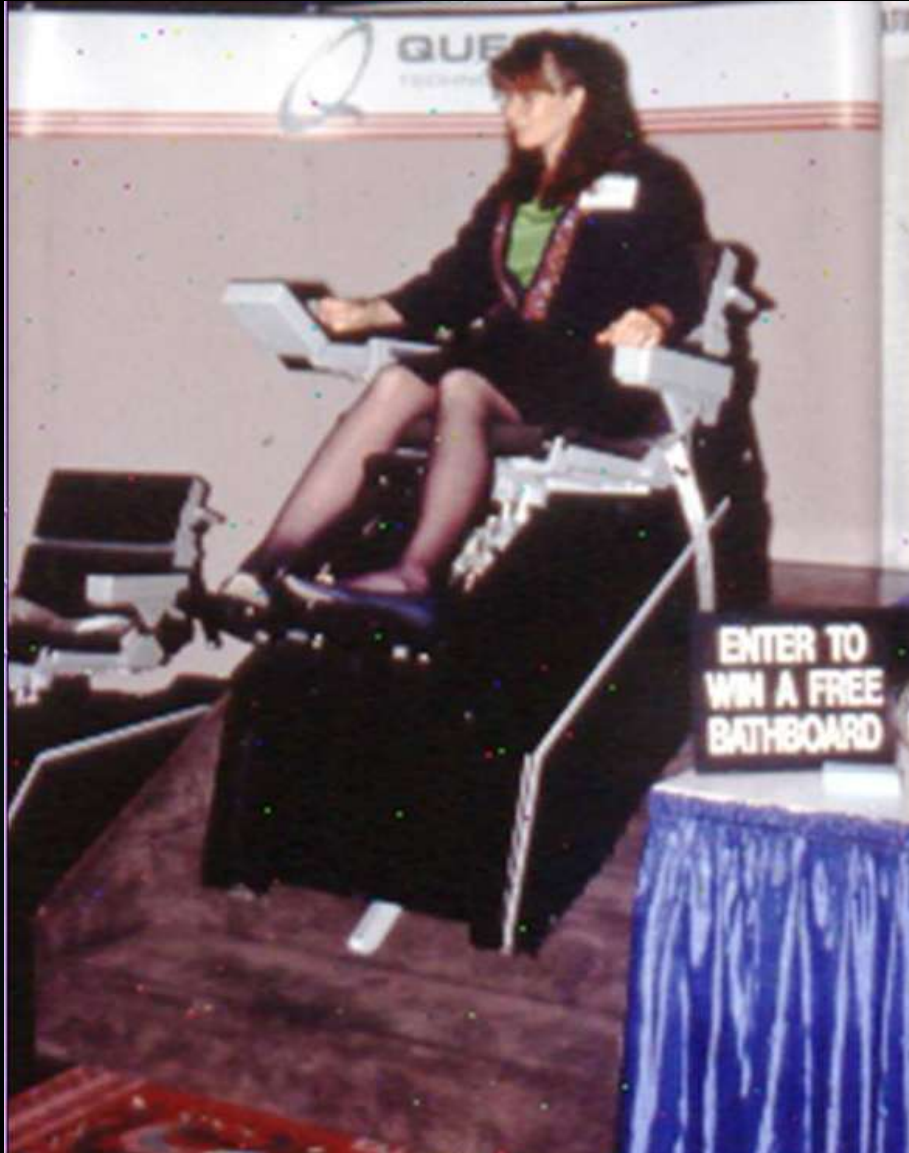


Garden party for Wounded men at the
White House 6/5/24 30963

Old Wheelchair Designs



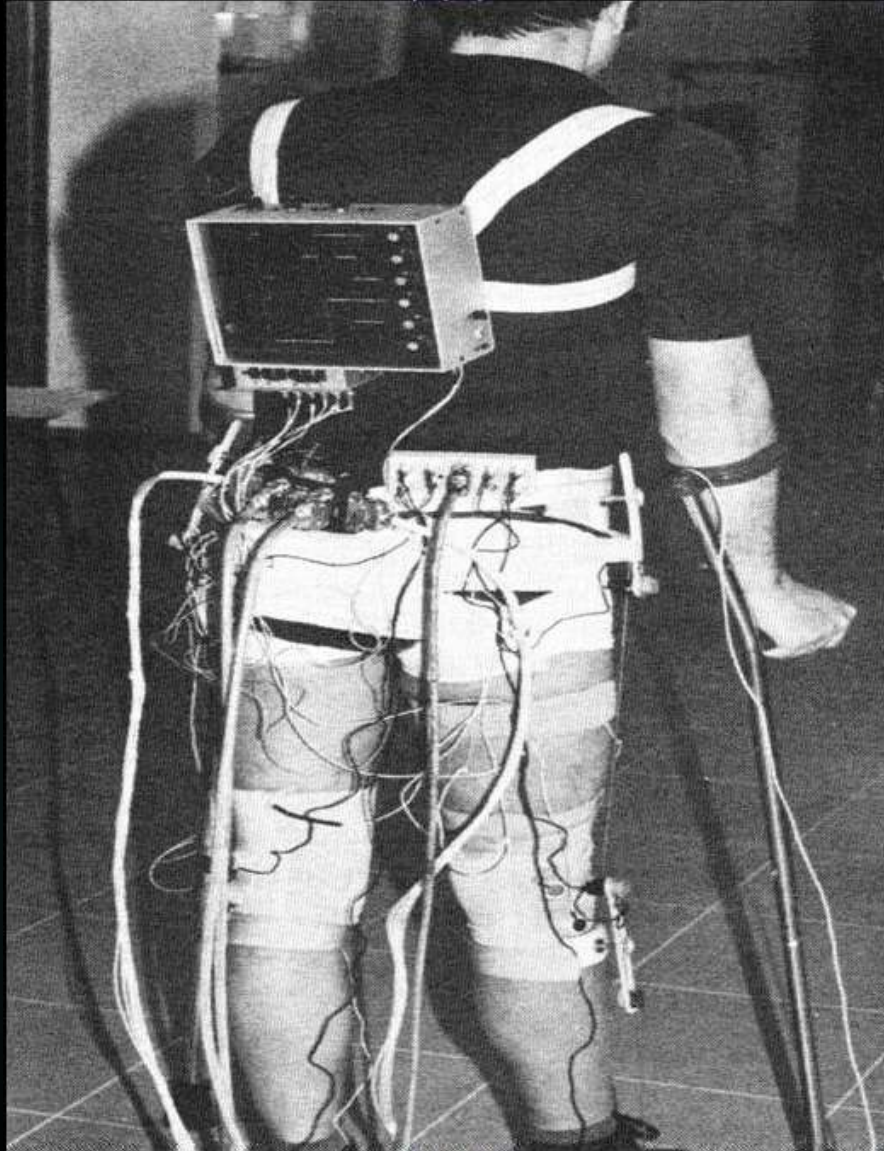
Old Wheelchair Designs



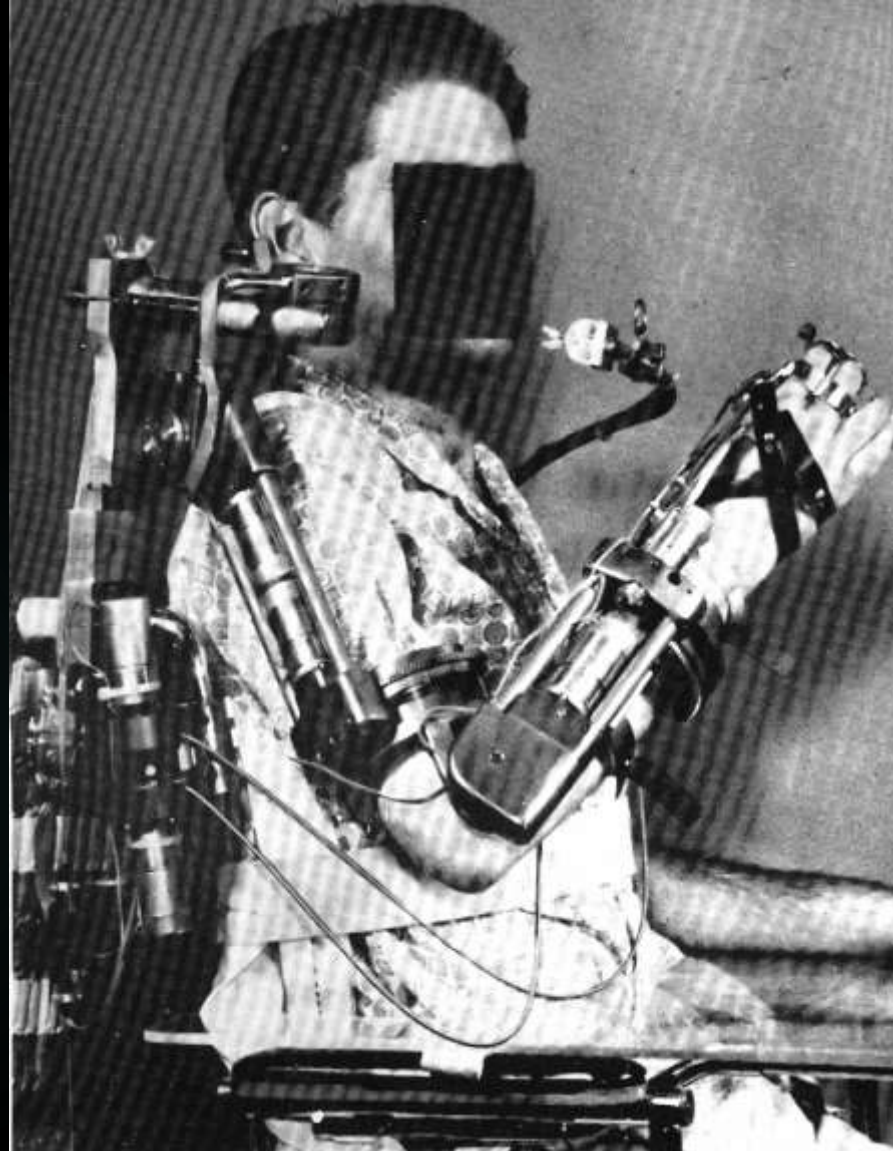
Omni-directional Wheelchairs



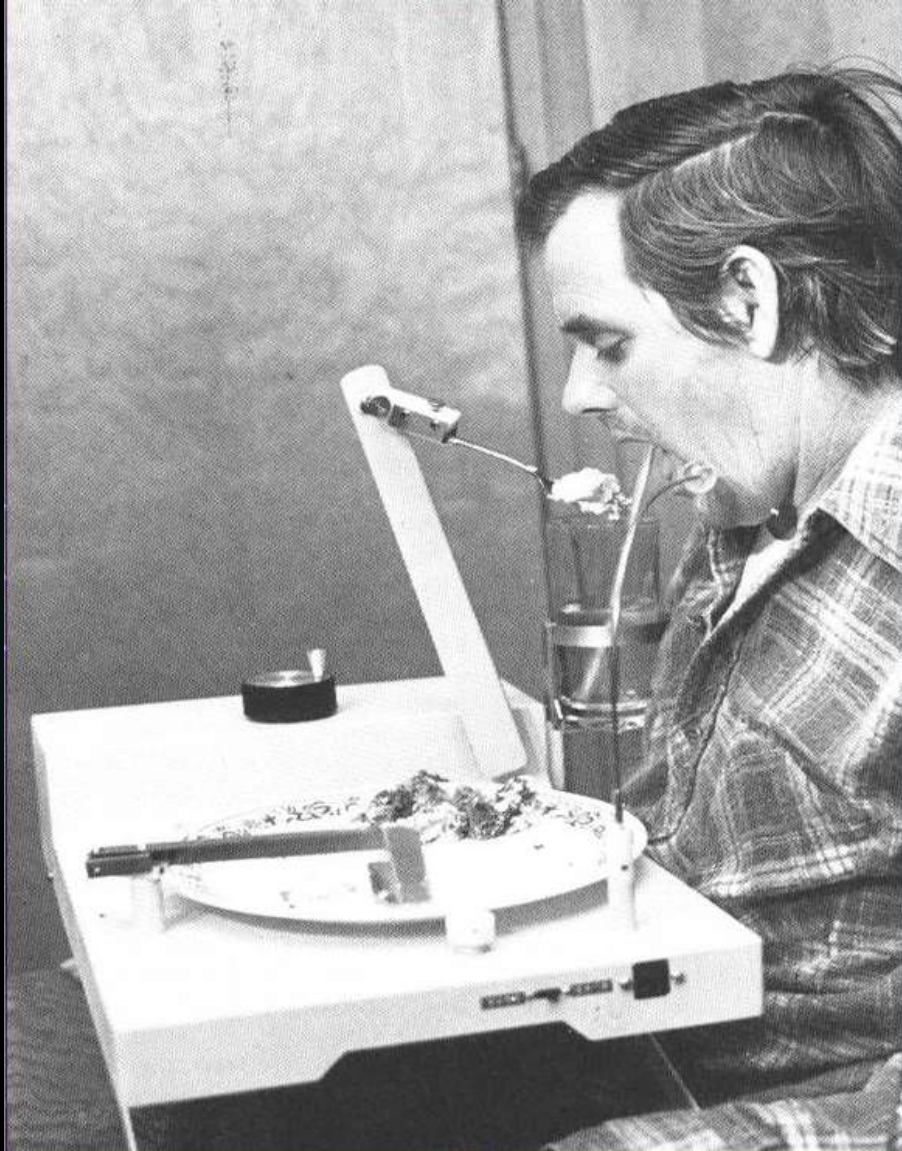
FES Walking



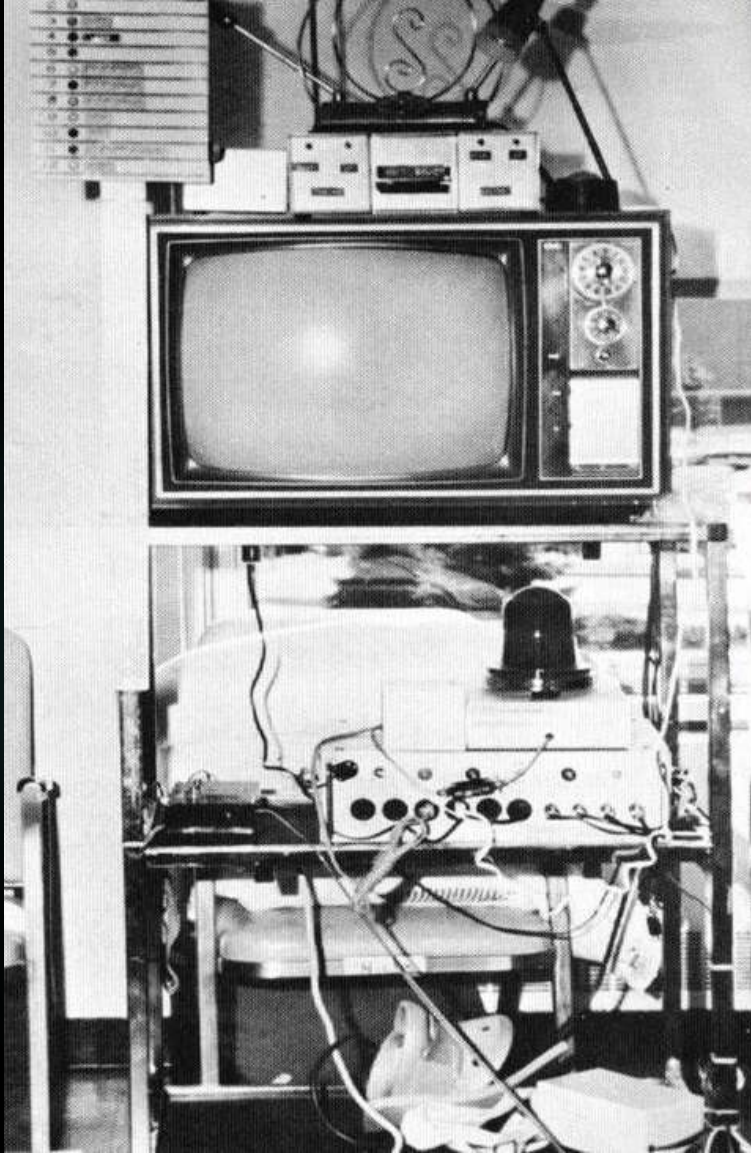
Chin Controlled Arm Exoskeleton



Robotic Feeding Aids



Early Environmental Control Systems



Eye Gaze Control



Augmented Communication System



Augmented Communication System



Artificial Arm from 1560 - 1600



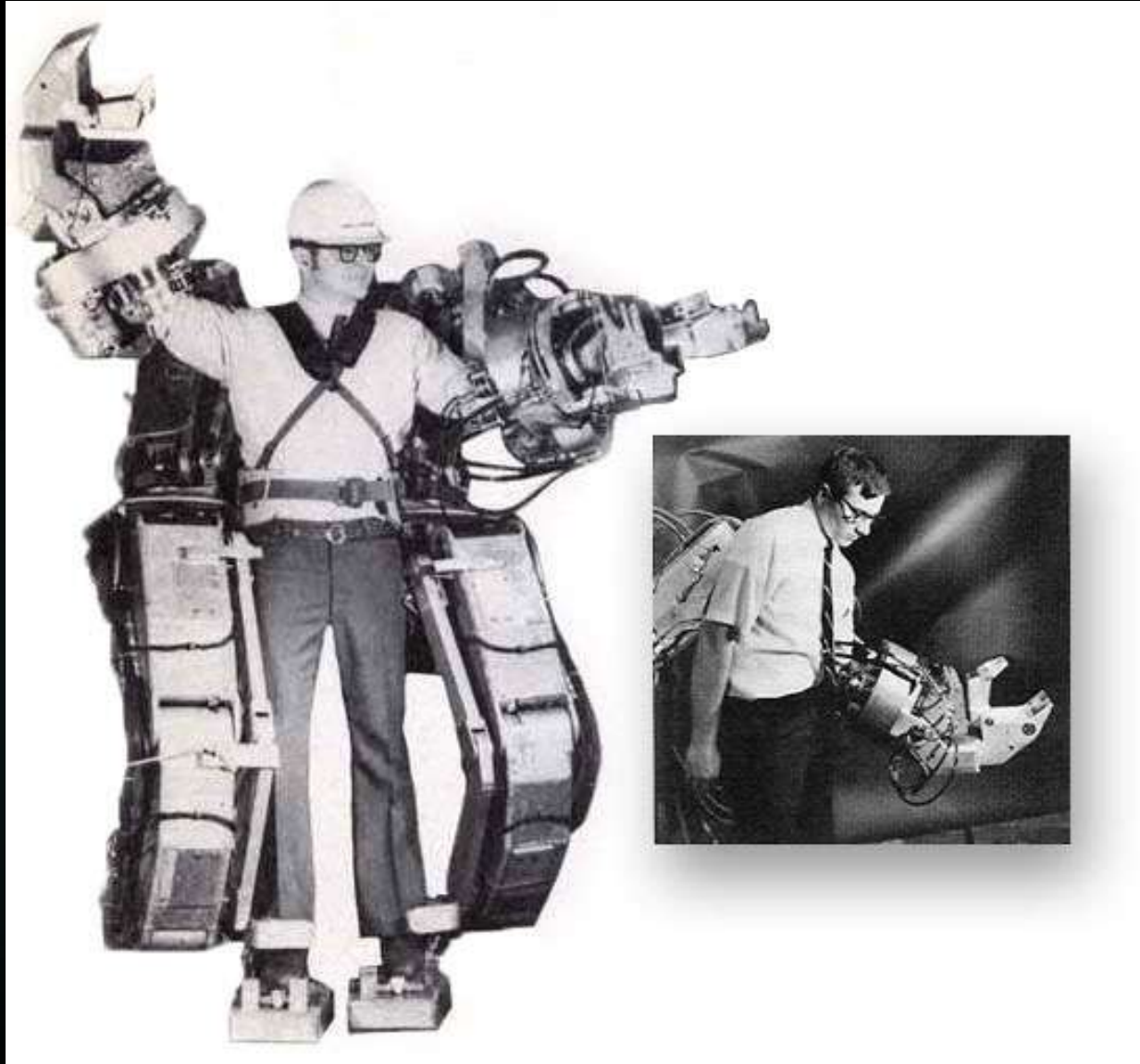
Peg Leg Bates



Wooden Prosthetic Legs



Hardiman Prototype - 1950s



Student Exoskeleton Arms



Ultimate Exoskeleton



Steampunk Professor Xavier Wheelchair Project



Steam Punk Professor Xavier's Wheelchair
By: Daniel Valdez
<http://www.meeon.com/>

[Video](#)

Orange County Chopper



▶ Christopher & Dana Reeve Foundation

▶ [Video](#)

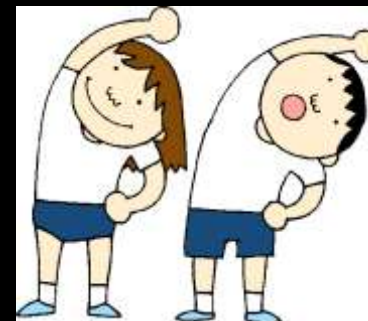
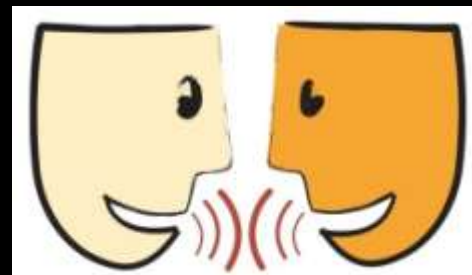


Questions?



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

