

January 17, 2012

ENGR110/210

Perspectives in Assistive Technology



David L. Jaffe, MS



Professor Drew Nelson



John Thiemer

Questions?



Who likes chocolate?



Team Project from Last Year



John Thiemer

Enrolled Students



Au, Cindy Ngoc.jpg



Bhandari, Rishabh.jpg



Bhembe, Ntokozo
Linda.jpg



Cullinane, Sara Marie.jpg



Davis, Mia Marie.jpg



Haydell, Tyler Tyler.jpg



Ho, Albert Aibo.jpg



Hsueh, Hain-Lee.jpg



Ishaq, Aneeqa.jpg



Kadokura, Grant
Masao.jpg



Le, Krystal Quynh Chi.jpg



Ly, Anna Kim.jpg



Murphy, Mark Alan.jpg



Patil, Sangram
Ravindra.jpg



Ramey, Sean
Michael.jpg



Rojasova, Sofia.jpg



Sajnani, Jai.jpg



Sastry, Rahul Amrutur.jpg



Sherman, Jules
Patricia.jpg



Simms, Danielle
Elizabeth.jpg

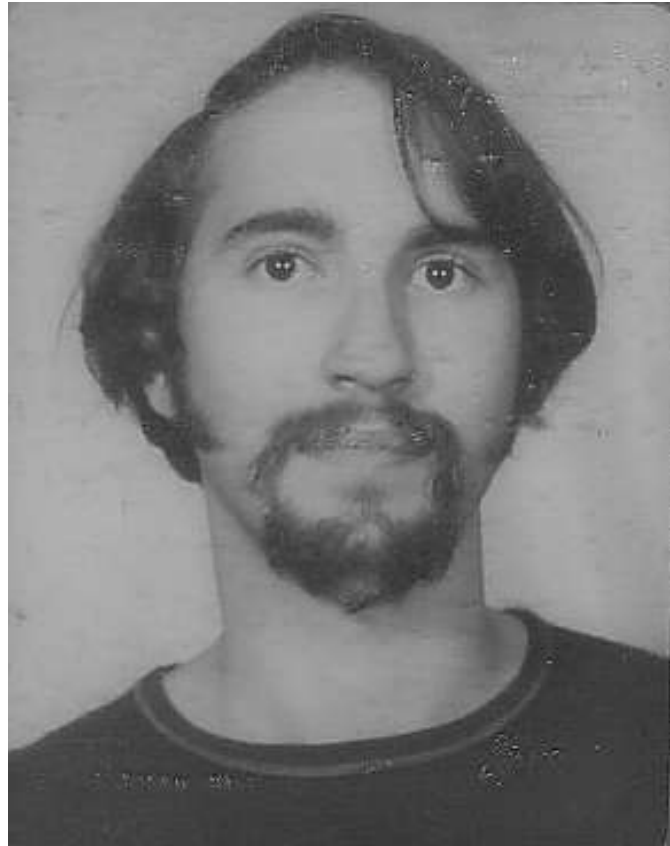


Torcolini, Nicole
Bemadette.jpg



Wynn, Nathaniel
Christopher.jpg

Northwestern ID Photo



Fall 1970

Don't have time to work on a project this year?

- Take ENGR110/210 for 1-unit now
- Work on an assistive technology project next Winter Quarter in ENGR110/210 as independent study
- Work on an assistive technology project in CS194, ME113
- Work on an assistive technology project this summer with SURI
- Get approval of your faculty advisor

Do you have a time conflict?

- See me if you would like to listen to the lectures but have a time conflict

RAFT Projects

- Ok for several student teams to work on RAFT projects
- Three kinds of projects. Explore designs:
 - for new accessible activities
 - to make existing activities accessible
 - that generally address the needs of learners with disabilities
- Ok for teams to share background tasks
 - Driving to RAFT
 - Interviewing students and teachers

Project Selection

- Consider project offerings
- Contact suggestor for more info
- Email top 3 project preferences to Dave
- Check website for student's project preferences
 - <http://engr110.stanford.edu/preferences.html>

Team Formation

- Consider other students' preferences
- Form a team by end of Friday
- Send email to Dave
 - Team members
 - Name of team
 - Name of project
 - Name of device or software

Engineering Design Process

- Understand the problem
- Determine the need
- Research what has already been done
- Brainstorm design concepts
- Select a concept
- Fabricate, test, evaluate, quickly repeat
- Report / present results
- Reflect on experience

Engineering Design Process

- Does not include:
 - Building to another's vision
 - Making incremental improvements
- Utilize project resources and team skills
- Make and justify your decisions

Individual Projects

- Consider the three individual project options:
 - Assistive technology topic
 - Paper design of an assistive technology device
 - Work of art
- Interview an individual with a disability. This could include: a family member, a friend, a classmate, a community member attending class, or others that I can suggest
- Report on their lives, challenges they have faced, successes they have achieved, desires for their future, assistive technology they use, and problems they have experienced with them.
- Meet with Dave to agree on project

Project Documentation

- Lab notebooks
- Photos and short videos
 - Working with a person with a disability
 - Illustrating your design process

Work with Diligence

- 7 weeks of class left
- Mid-term in 4 weeks for team projects

Assistive Technology Market

- Many people with a disability – in US and world-wide
- Every consumer has unique needs and desires
- Largest homogeneous group in the US is wheelchair users
- Lack of a well-defined mass market means that companies serving individuals with disabilities are small and their products are expensive



Assistive Technology Market Strategies

- Build an assistive technology device that has a wide market appeal
 - Seniors
 - Gamers
 - Spans many consumer groups
- Take advantage of existing technology in new assistive technology devices
 - NeuroSky MindSet
 - Computer technology
 - iPad, iPhone, Internet, etc

Robert Van Etten

- Dwarf
- Midget
- Shorty
- **Little person**
- Munchkin
- Elf
- Height challenged
- Scooter-guy



Who is Disabled?

Disability is defined as a health condition or physical impairment that prevents an individual from taking full advantage of life's opportunities such as education, vocation, recreation, and activities of daily living.

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- This individual employs a speech output communication device to facilitate his communication.

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- This individual employs a powered wheelchair for his mobility.
- This individual employs a speech output communication device to facilitate his communication.
- The individual is Stephen Hawking, often described as the smartest person alive.



What's the Point?

- What makes the difference between ability and disability?
- With limited or incomplete information, you may not be able to make an accurate determination of a person's ability
- Other conditions affecting communication that influence how an individual is viewed
 - Brain injury
 - PTSD
 - Psychological factors

Thursday, Jan 19th



Debbie Kenney, MS, OTR/L

The Transdisciplinary Team: Bridging the Gap between Consumers and Products in Rehabilitation Medicine

Today



Gayle Curtis – Design Consultant

Need Finding for Assistive Technologies

Short Break

