January 12, 2016

ENGR110/210
Perspectives in Assistive Technology

David L. Jaffe, MS
Instructor
Questions or Concerns?
Wednesday Lecture

AFRICA TABLE: Disability Inclusion in Africa: It Impacts All of Us
**Haben Girma**, White House Champion of Change and Staff Attorney at Disability Rights Advocates

Wednesday, January 13 | Noon - 2:00 pm
Encina Hall West, Room 219, 417 Galvez Mall

*Lunch will be served*

Join the Center for African Studies for our weekly lunchtime lecture series followed by a special reception co-sponsored by the Stanford African Students Association (SASA) and the Nigerian Students Association (NAIJA).

**Africa Table: 12:00 - 1:00 pm** in 219 Encina Hall West
**Reception: 1:15 - 2:00 pm** in 100 Encina Commons (Center for African Studies)

Honored as a White House Champion of Change, and the first Deafblind graduate of Harvard Law School, Haben Girma advocates for the civil rights of persons with disabilities. A celebrated speaker, she provided the introductory remarks for the 25th Anniversary of the ADA at the White House. Her TEDxBaltimore Talk has garnered significant attention. Haben was most recently featured in *Forbes 30 under 30 2016* as a change agent in the Law & Policy sector.

Haben joined Disability Rights Advocates in 2013 as a Skadden Fellow, and became a Staff Attorney in 2015. She helped achieve a legal victory in National Federation of the Blind v. Scribd, the second case to hold that the ADA applies to e-commerce. She received her JD in 2013 from Harvard, and her BA, magna cum laude, in 2010 from Lewis & Clark College. Haben lives in Berkeley, California, and her parents are from Eritrea and Ethiopia. To learn more visit habengirma.com.
Attendance Sheet and Evaluation Form

For all students:
• Attendance Sheet - important to verify your attendance

For everyone:
• Class Session Evaluation Form
Individual Projects

• Consider the these options:
  – Assistive technology topic
  – Paper design of an assistive technology device
  – Work of art
  – Aftermarket aesthetic, functionality, usability design

• 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
Team Project Selection Procedure

- Project Preferences: [http://engr110.stanford.edu/preferences.html](http://engr110.stanford.edu/preferences.html)
- Suggest a student-defined project
- Make sure the project you are interested in is available
- Contact project suggestor for more information & access to users
- Refer to [Preference by Projects](http://engr110.stanford.edu/preferences.html) and contact other students who have similar project interests
- Verify their desire and availability to work on the project
- Once a team of three is formed, email Dave with your project selection, team members, and team name – **by this Friday**
Available Projects

- Authoring Grade School Lessons on Disability and/or Assistive Technology (2 projects)
- Art Tools Project (2 projects)
- Aesthetic Brace Fairing Project
- Educational Design Challenge Kit for Children with Disabilities (2 projects)
- Customize Abby's Scooter Project
- Horseback Riding at Home Project
- Project employing the Leap Motion Controller
- Magical Bridge Playground Project (2 projects)
- Walking Stick Project
- Wheelchair Backup Alert Project
- Enhanced access to touch screen devices
- Enhanced bed control for veterans with spinal cord injury
- Creative Expression (2 projects)
- Designing Your Afterlife (2 projects)
- Student-defined projects
Team Project Selection Policies

- Strive to form a team of three
- Teams of less than three are ok only if all other students who have indicated a preference for the project are members of other teams
- \( \frac{\text{# of students working on team projects}}{3} \) with a remainder
  - Remainder of 1 = one team of 4 or two teams of 2
  - Remainder of 2 = one team of two
- Not all projects can support multiple teams
- Projects are reserved on a “first to email” basis
Team Project Selection Policies

• Ok for more than one student team to work on some of the team project suggestions
• Ok for teams to share background tasks
  – Driving to the facility
  – Interviewing project suggestors
• Each team must address a separate problem or pursue a different solution
Team Project Selection

Since there is no guarantee that other students will have the same project interests, you should be prepared to do one of the following:

- convince others to work with you on one of your selected projects
- consider working with another student on a project he/she has chosen
- work on a project you selected as a team of one
Team Member Solicitation

• Teams looking for a third member
• Student looking to join a team of two
Engineering Design Process

• Understand the problem (empathy & ethnography) and how it affects the person experiencing it
• Research what has already been done and why it hasn’t fully solved the problem
• Determine the need (a judgment)
• Brainstorm many design concepts
• Select a few concepts
• Fabricate, test, evaluate, quickly repeat
• Report and present results
• Reflect on your experience
Engineering Design Process

- Does not include:
  - Building to another’s vision
  - Making incremental improvements
- Utilize project resources and team skills
  - PRL and Room 36 (equipment and TAs)
  - Person who suggested project
  - Course resource people
  - Classmates
  - Dave
- Make and justify your project decisions
Project Documentation

• Lab notebooks not required
• Diary for your Individual Reflection
• Photos and short videos strongly suggested
  – Working with a person with a disability
  – Illustrating your design process
  – Prototypes
Work with Diligence

• What is the most precious resource?
• 7 weeks of class left to work on your projects
• Mid-term team presentations in 4 weeks
1. Weblinks and photos added to lecture webpages
2. Anonymous Suggestion Box for comments and rhetorical questions
   - [http://engr110.stanford.edu/suggestion.html](http://engr110.stanford.edu/suggestion.html)
3. PRL Safety Orientation & Shop passes
4. Last bits:
   - Remembering names
   - On your team
   - On your side
   - Good grades
   - Ammunition
   - Test questions
Project Teams

• Knee Brace Project

• The First Team with No Name
  – Catania, Michelle Alexis
  – Kraus, Reed Andrew Haggerty
  – Law, Jason Christopher
Project Teams

• **iPhone and Me Project**
• **To Be Determined**
  – Anderson, Nina Marie
  – **Cheung**, Nicholas Chung-Do
  – **Weinstein**, Zachary Michaud
Project Teams

• **Aesthetic Brace Fairing Project**
• **Swift Engineering**
  – **Ferrer**, John Michael Galan
  – **Wu**, Susan
  – **Zeng**, Anna Sijia
Project Teams

• Improved Walker Project (1 of 2)
• The Second Team with No Name
  – Gueble, Isabel Sarah
  – Troxel, Tom John
  – Xue, Evelyn Evelyn
Project Teams

• Support System to Destigmatize Mental Health in the Black Community
• The Third Team with No Name
  – Sawhney, Kartik
  – Sneed, Lynne Thompson
  – Watkins II, Paul
Project Teams

• Jogging and Running Aid for the Blind and Visually Impaired

• TBD
  – Flowers, Caroline
  – Trzpit, Thomas Paul
  – Wei, Alyssa Mariko Kuuleilani
Project Teams

- Improved Walker Project (2 of 2)
- The Fourth Team with No Name
  - Creadore, Lauren Theresa
  - Ravichandiran, Harine
  - Taylor, Annalisa Tulle
Project Teams

• Power for Veterans Project

• Team Supreme
  – Buendia, Julio Daniel
  – Garcia, Victor Alfonso
  – Pham, Harry Toan
Project Teams

• Magical Bridge Playground Project
• The Fifth Team with No Name
  – Awotwi, Ekua
  – Homsi, Natalie Yara
  – Wheeler, BJ James
Project Teams

• Aesthetic Brace Fairing Project
• The Sixth Team with No Name
  – Olson, Anna Yifan
  – Su, Lisa Deling
  – Lastname, Firstname
## Course Composition

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Thursday, Jan 14th

Deborah E. Kenney, MS, OTR/L

Bridging the Gap between Consumers and Products in Rehabilitation Medicine
Today

Gayle Curtis - UX Design Consultant

Needfinding and Context Discovery for Assistive Technologies
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
Short Break
Laptops Galore