

Arne's Photos

01/09/2014





## Did You Miss Tuesday's Lecture?

- Pick up handouts from Tuesday:
  - Student Team Candidate Projects
  - Enrolled Student Signup Sheet
- Review first lecture audio and slides on course website <http://engr110.stanford.edu/lecture01a.html>
- Email me a 1 – 2 page summary of the lecture including your thoughts
- Upon receipt of your summary, I will credit you with "attending" this mandatory lecture



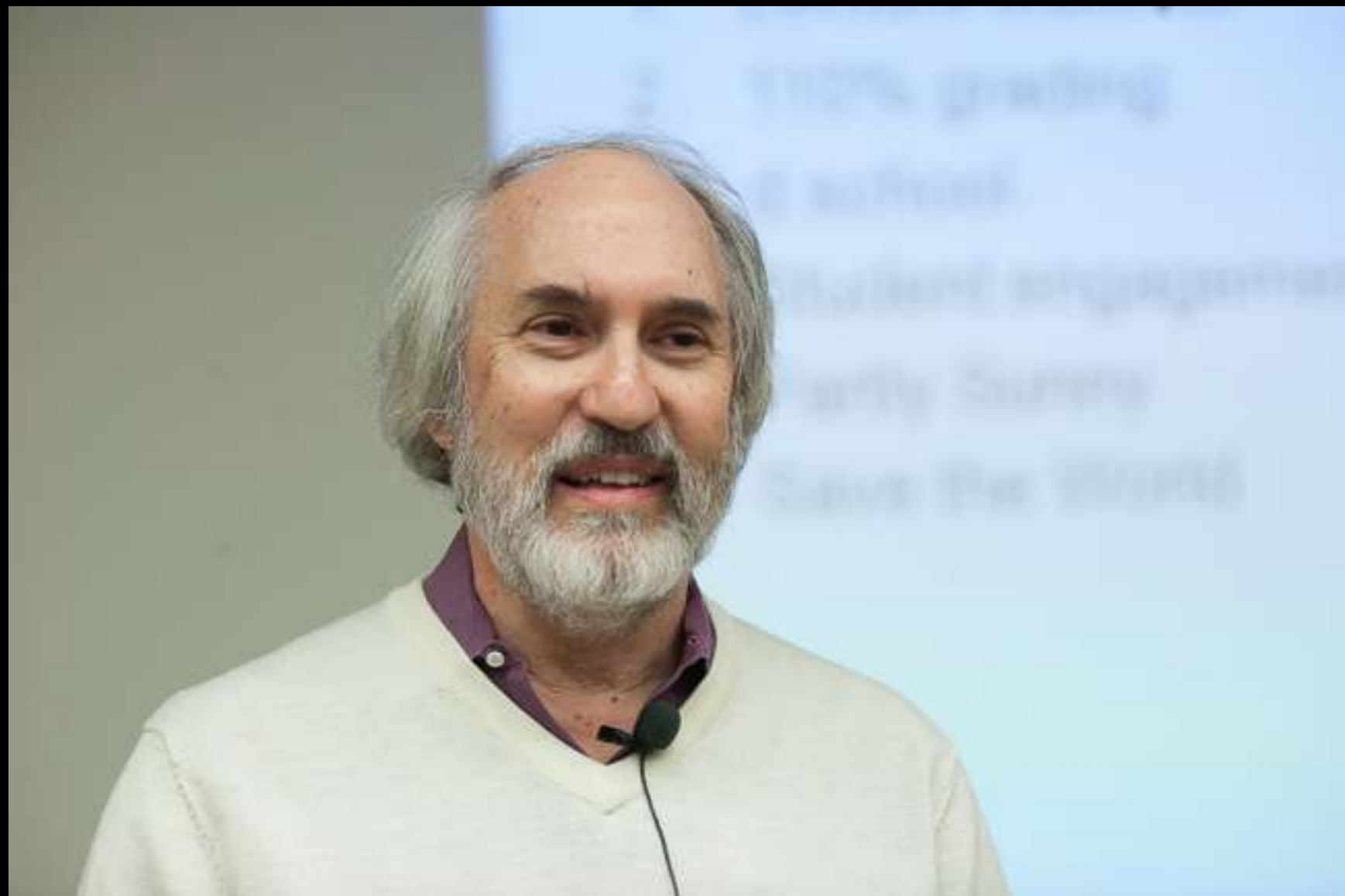
## Miscellany

1. Lecture Material
2. 110% grading
3. d school
4. Student engagement
5. Party Sunny
6. Save the World



## Miscellany

1. Lecture Material
2. 110% grading
3. d school
4. Student engagement
5. Partly Sunny
6. Save the World



























# PURPOSE

Make something!

Get your concepts out into the physical world through hands-on prototyping and exploration.

Design 26 is part of the

# RESOURCES – COACH

Teaching assistants are available during all open hours for design and building coaching.



## RESOURCES – COACHING

Teaching assistants are available during all open hours for design and building coaching.



## Project Pitches

- **Magical Bridge Playground Project** - Olenka Villarreal & Adam Rosenzweig
- Explore designs to address the following issues, creating a safe, fun, accessible, and inclusive park serving all children and their parents:



Greg Brown





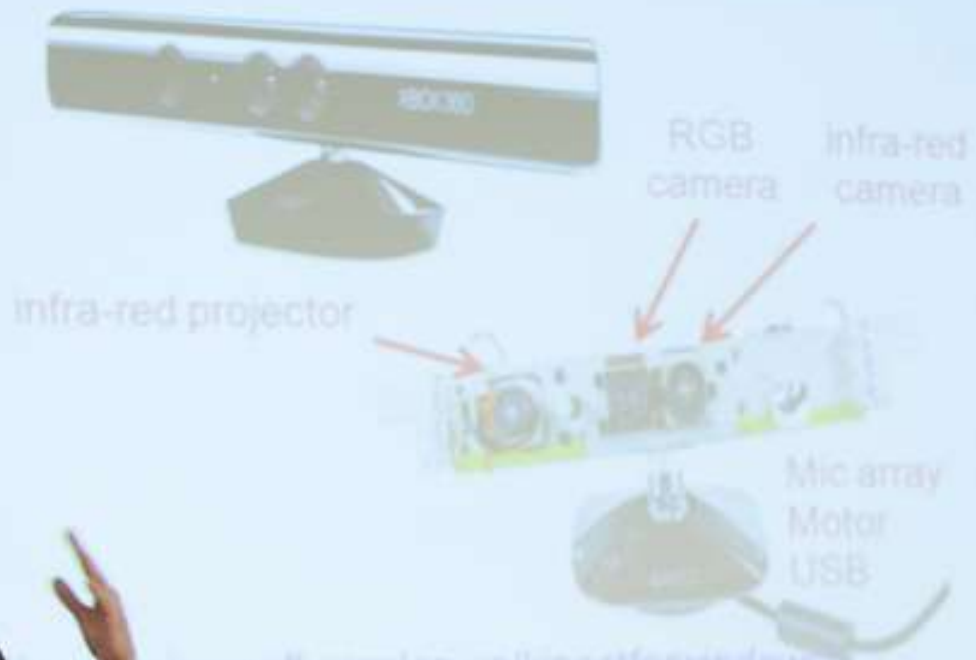
# Project Pitches

- **Educational Activities for Children with Disabilities** - Greg Brown, RAFT
- Investigate and develop new educational activities appropriate for children with disabilities. This may include mechanical and/or computer software solutions that will provide interactive access for these learners.

On deck: John Tang



# Kinect Sensor



[www.microsoft.com/en-us/kinectforwindows/](http://www.microsoft.com/en-us/kinectforwindows/)



# Skeletal Tracking



input depth image



inferred body parts & overlaid joint hypotheses



top view



front view

side view

3D joint hypotheses



## Project Pitches

- **Asthma Control Project – Ryan Van Vert**
- Explore ways to change the design or features of traditional flow meters and apps that would make them more attractive and fun for children to use.

On deck: Dan Gillette & Ted Selker



## Project Pitches

- **Enhanced Access to Voting – Dan Gillette & Ted Selker**

- Enhanced access to mailed paper ballots

- Enhanced access to online voting

- Enhanced access to paper

On deck: Sara Frankel & Donald





## Project Pitches

- **Balance Buddy & Moxie Mobile** – Sara Frankel & Donald Olgado

- *Balance Buddy* - The project goal is to explore design concepts for an easily managed device to help older adults who are having balance problems in their homes.



- *Moxie Mobile* - The solution(s) to be explored should propose a new mobility assistive device (or family of devices) which is not only easy to engage but also encourages use.

On deck: *Chris Bayne*



# Moxie Mobile

## Problem:

- Within the limited budget (about \$2M) patients have expressed a need to use at-home sensors and related, wireless healthcare applications.
- One suggestion that emerged was to use a mobile phone for applications for a low number of applications.
- Several such as number of calls and times are made (number of times) or ability to download to use a better customer and a central way of managing and design improvement.
- Another goal was to have a way of tracking the use of the application and getting feedback from the user experience.



## Project Pitches

- **Wheelchair Adaptor for the ROTA Mobility RoWheel – Chris Bayne**
- Explore designs for a mechanical adaptor to attach / detach the RoWheel to / from most any make or model of rigid framed wheelchair.

Adriana Duffy-Horling





## Project Pitches

- Wheelchair Adaptor for the ROTA Mundy RoWheel - Chris Bayne



## Project Pitches

- **Accessible Stroller for a Wheelchair-Using Parent – Adriana Duffy-Hörling**

- Explore design concepts for an accessible stroller or a device that would offer similar features.



On deck: Elaine Lynn



EXIT







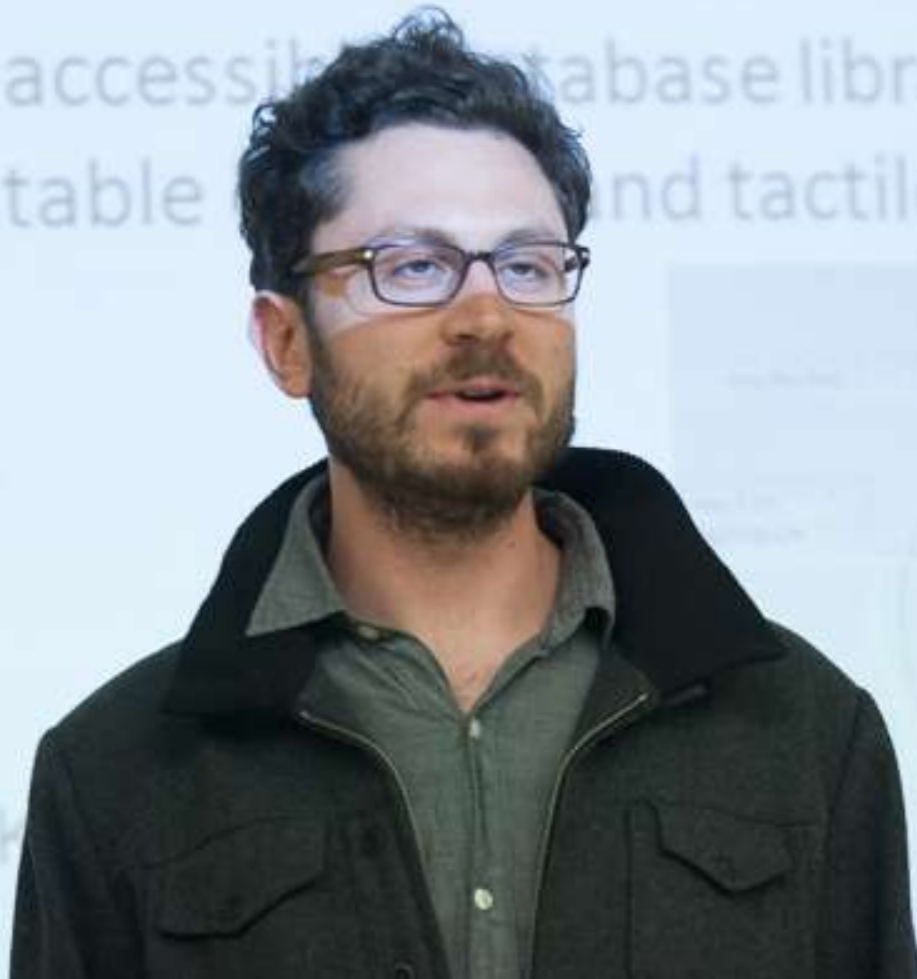






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# Project Pitches

- **3D Printing of Tactile Graphics / Objects for Teaching Blind Students - Adam Bernstein**
- Design and document the foundations of an online collaborative accessible database library of physical learning tools, 3D printable objects and tactile graphics for use in education.

On deck: bie K





# Project Pitches

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On deck:  Mike K



## Project Pitches

- **Project employing the Leap Motion Controller – Michael Bernstein**
- Explore an application for a person with a disability using the Leap Motion Controller product. Examples include enhanced computer control and accessibility for those with limited manipulation abilities, physical therapy coach, control of household appliances (lights, TV, music system), operation of Bluetooth devices (iPhone), and implementation of an on-screen keyboard.



On deck: Dave for Mark Felling

## Project Pitches

- **Project employing the Leap Motion Controller – Michael Bernstein**
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On deck: Dave for Mark Felling

## Project Pitches by Dave

- Pooper scooper for canine companions of wheelchair users – Deane F. Denney
- Explore designs for a pooper scooper system that will be easy for pet owners with a disability to use.



On deck: Dave for Karen Parecki

## Project Pitches by Dave

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On deck: Dave for Karen Patecki



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On deck: Dave for Karen Parecki

## Project Pitches by Dave

- **Handbike Leg Positioning Project** – Debbie Pitsch
- Explore designs to prevent knee hyperextension while operating this competitive handbike as well as protect the leg from contact with the bike's wheel.



On deck: Dave for Evi Klein

## Project Pitches by Dave

- **Microphone Comfort and Appearance Project** – Evi Klein
- Explore designs that address comfort, adjustability, positioning, and appearance issues.

This project is suitable as an individual rather than a team project.



On deck: Dave for Deane F. Denney

## Project Pitches by Dave

- **Enhanced bed control for veterans with spinal cord injury** – Deane F. Denney
- Explore solutions that would enable veterans to more easily operate their beds, including voice activation.



On deck: Dave for Deane F. Denney

# Project Pitches by Dave

- **Enhanced access to touch-screen devices** – Deane F. Denney
- Explore ideas that would enable users to make their selections more accurately on their personal touch screen devices.





## Project Pitches by Dave

- **Guide Robot for the Blind – Brian Higgins**
- Build a user-interface that facilitates communication between the robot and the user as well as the platform that supports the motorized computerized robot device.



On deck: Aman Kumar

## Project Pitches by Dave

- **Projects suggested by Aman Kumar**

- Design a prototype device or app for communicating and visualizing symptoms of retinal detachment
- Design a prototype device or app that would assist health care professionals in assessing the effects of stuttering therapy
- Design a prototype device or app that would provide audio feedback of stutterers speech and video feedback of muscle disruptions that accompany stuttering
- Design a prototype device or app that would connect health care professionals with stutterers living in rural areas to provide care and therapy

On deck: Dave for Pat McCarty