January 9, 2020
Team Project Pitch Day

ENGR110/210
Perspectives in Assistive Technology
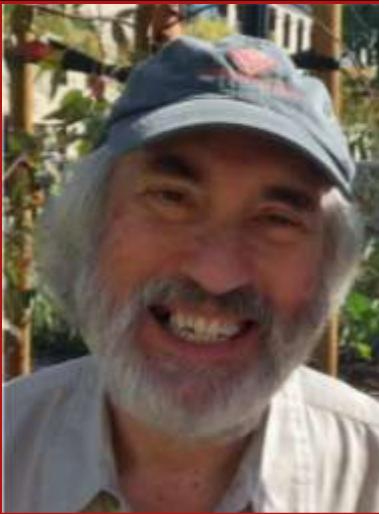
David L. Jaffe, MS

Instructor

14
Years

Do You Have Any Questions?
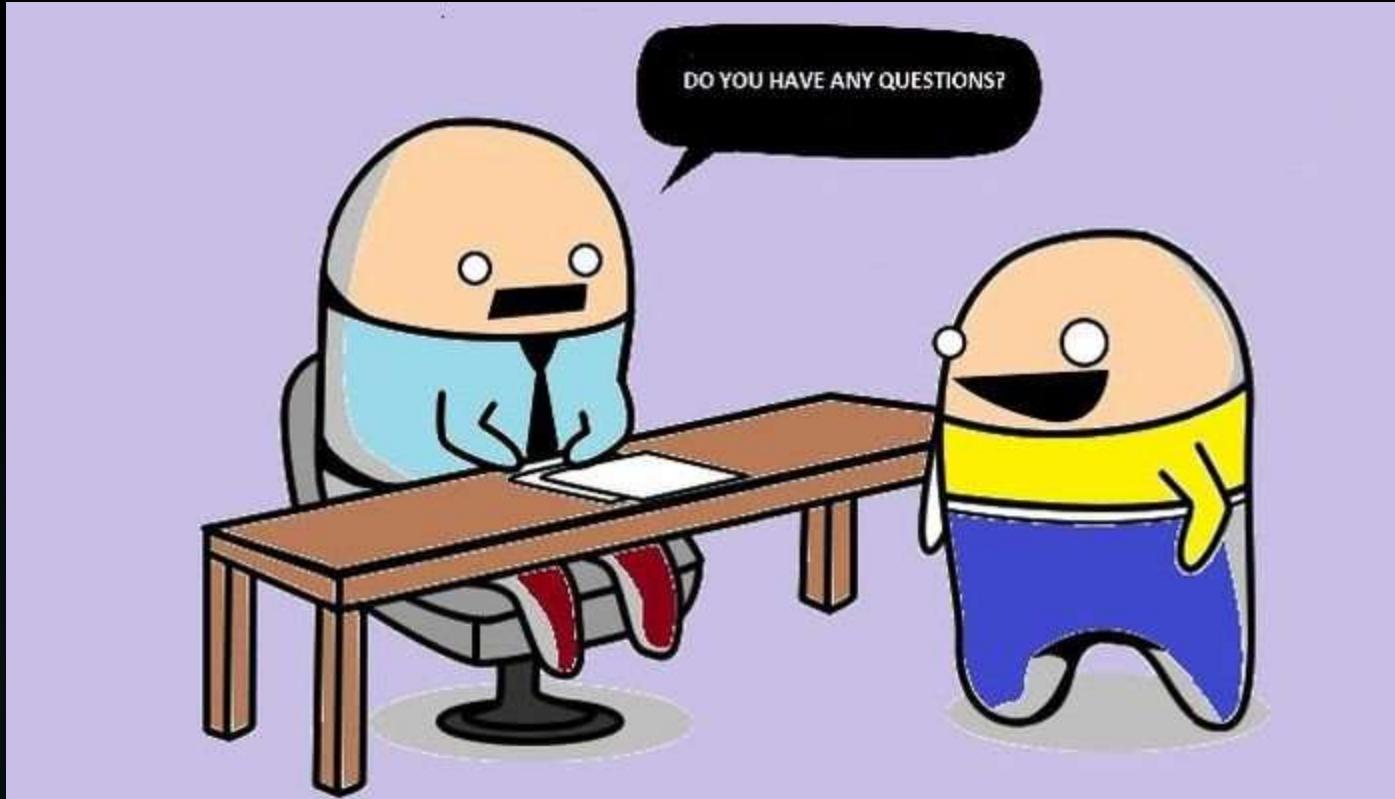
Thanks to:

- ## Students:
  - Enrolling and participating in the course
  - Filling out lecture evaluations and comments
- ## Haas Center for Public Service
  - Funding
- ## Community members
  - Participating and "adding to the conversation"
- ## Project suggestors
  - Suggesting great projects
  - Working with teams

Reminder for Everyone

Students

If you haven't already done so, please enroll or drop ENGR110/210 on Axess.

If you weren't here on Tuesday, pick you your personalized handout packet.

Missing a required class session

1. Let me know (beforehand, if possible) by email
2. Do *not* provide a reason
3. Make up the missed class session promptly

REASONS ARE *bullshit*

THEACHIEVEMENTHABIT.COM

THE ACHIEVEMENT HABIT

STOP WISHING, START DOING, *and* TAKE COMMAND OF YOUR LIFE

BERNARD ROTH
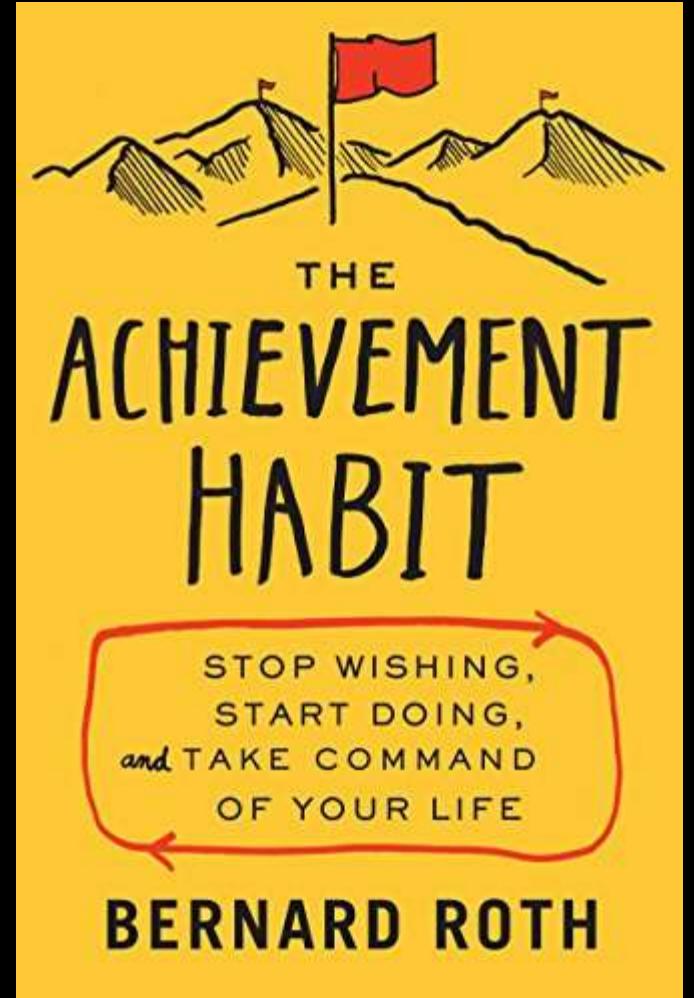
Enrolled Student Attendance List

All enrolled students:
Please sign this list in every class session to confirm your attendance.

Other students:
Please sign this list in every class session to get credit for your attendance.

It is important to verify your attendance at every class session

Candidate Team Projects

For students taking the course for three credits.

Web links

2020 Candidate Team Projects
Team projects are for students taking the course for three credit units.

ENGR110/210
Perspectives in Assistive Technology

David L. Jaffe, MS
Tuesdays & Thursdays   4:30pm - 5:50pm
Lathrop Library - Classroom 282

Contact Information for Teaching Staff & Project Resource People

David L. Jaffe, MS   Course Lecturer   davejaffe@stanford.edu
Matteo Zallio, PhD   Fulbright Scholar   mzallio@stanford.edu
Deborah Kenney   Occupational Therapist kenney5@comcast.net
Doug Schwandt   ME Design Consultant   doug.schwandt@gmail.com
Jules Sherman   Designer & Entrepreneur jules@julessherman.com

Course Website: http://engr110.stanford.edu

Considerations for Team Formation

Project preference
All team members should have a strong desire to work on the same project - obviously.

Team's engineering skill set
The team's expertise and skills should match those required to address the project's challenges.

Personality
There should be a compatible mix of personalities in the team.

Friends and team members
"A good friend does not necessarily make a good team mate." Dave

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

1) convince others to work with you on one of your chosen projects
2) consider working with another student on a project he/she has chosen

Project Pitch Schedule for Thursday, January 9th
(Presentation order is subject to last minute changes)

Projects pitched by their suggestors:

1. **Projects with Abby:**
   - Camping Cot Project
   - Laptray Project
   - Alert Project
   - TravelScoot Camping Project
   - WHILL Model Ci Enhanced Visibility Project
2. **Projects with June:**
   - Clean House Project
   - Within Reach Project
3. **Project with Paul:**
   - Access to Photography
4. **Projects with Olenka**
   - Accessible & Inclusive Playground Attractions (2 projects)
5. **Projects with Danny & Stanford**
   - Project 1
   - Project 2
6. **Projects with Amy**
   - Wheelchair Dancing
   - Creative Expression using an Instrumented Wheelchair
7. **Projects with Nick**
   - Arm Rest Project
   - Improved Wheelchair Caster Project
8. **Project with Nathan & Zia**
   - Wheelchair Accessories Project
9. **Project with Ben**
   - Laptray for Ben
10. **Project with Jerry**
   - Smartphone and Tablet Holder for Easy Viewing and Stability

Projects pitched by Dave:

11. **Creative Expression**
12. **Designing Your Afterlife**
13. **Student-defined Team Projects**

For project photos and web links browse to:
http://engr110.stanford.edu/team-projects.html

Suggestor contact information will be made available to teams interested in getting more information on a particular project they are considering and to all teams when they have been assigned their project.

Today's Handout - Project Preferences for Students working on Team Projects

Perspectives in Assistive Technology - Winter 2020
Project Preferences for Students Working on Team Projects (3 credit units)

Student name: _____

As each project is pitched, indicate your general interest in one of the first three columns with a ✓ or ✗. At the end of the all the presentations, select your top five project preferences in the fourth column - optionally providing an ordinal (1st, 2nd, 3rd, 4th, 5th) ranking.

☹	😐	☺	Indicate Top Five	Project Name
				1. Camping Cot Project - Abby
				2. Laptray Project - Abby
				3. Alert Project - Abby
				4. TravelScoot Camping Project - Abby
				5. WHILL Model Ci Enhanced Visibility Project - Abby
				6. Clean House Project - June
				7. Within Reach Project - June
				8. Access to Photography - Paul
				9. Magical Bridge Playground Project 1 - Olenka
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Tuesday, January 14th
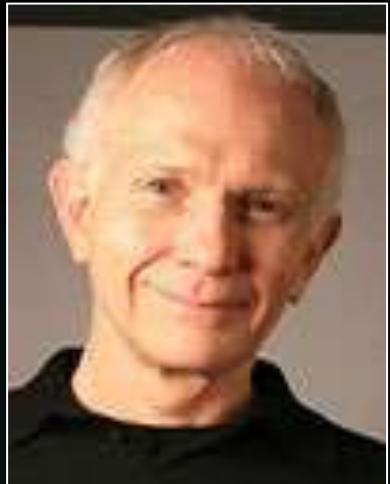
Creating Assistive Technologies - Understanding the Problem

Gayle Curtis - UX Design Consultant

Leftovers from Tuesday

Terry Schiavo

1. Persistent vegetative state - loss of higher brain functions

2. Course website - http://engr110.stanford.edu
   Syllabus
   Lecture Schedule

3. Gender disability

4. Suggestions and observations: Attendance Signup Sheet

5. Moses' disability: In a test of baby Moses' capability to destroy the kingdom of Pharaoh, angel Gabriel guided Moses' hand to pick up live coal, which he took up and put in his mouth. This burned his tongue, causing him difficulty in speaking, but saved his life.

Today's Agenda

1. Introduction of Course Resource People

2. Overview of PRL and Room 36 Resources

3. Brief break

4. Considerations for Team Formation and Project Selection

5. Project Pitches

6. Open Question Time and Non-Random Access

Course Resource People

- Matteo Zallio, PhD
- Deborah E. Kenney, MS, OTR/L

- Douglas F. Schwandt, MS
- Jules Sherman

Five Minute Overview of PRL & Room 36 Resources

Video from last year

Andrea Stein

Elliot Helms

Tom Trzpit

All Former ENGR110 Students

INTRODUCTION TO
ROOM 36

STANFORD
PRODUCT
REALIZATION
LAB

▸ Design and Manufacturing

▸ Open to any current Stanford student

▸ Any project*, personal or class-related

▸ Tools and Workspace

▸ Training, Advice, and Inspiration from our talented and knowledgeable faculty, staff, course assistants, and user community

STANFORD PRODUCT **REALIZATION** LAB

Leadership Team

STANFORD PRODUCT REALIZATION LAB

Course Assistants

CAs bordered in red have taken ENGR110 or ME113

ROOM 36

RAPID PROTOTYPING

▸ Make Something!

▸ Build, Test, and Communicate your ideas... quickly

▸ No experience necessary

▸ Think with your hands

▸ Have Fun!

LASER CUTTING

ADDITIVE MANUFACTURING

3D SCANNING

VINYL CUTTING

FOAM CUTTING

SEWING
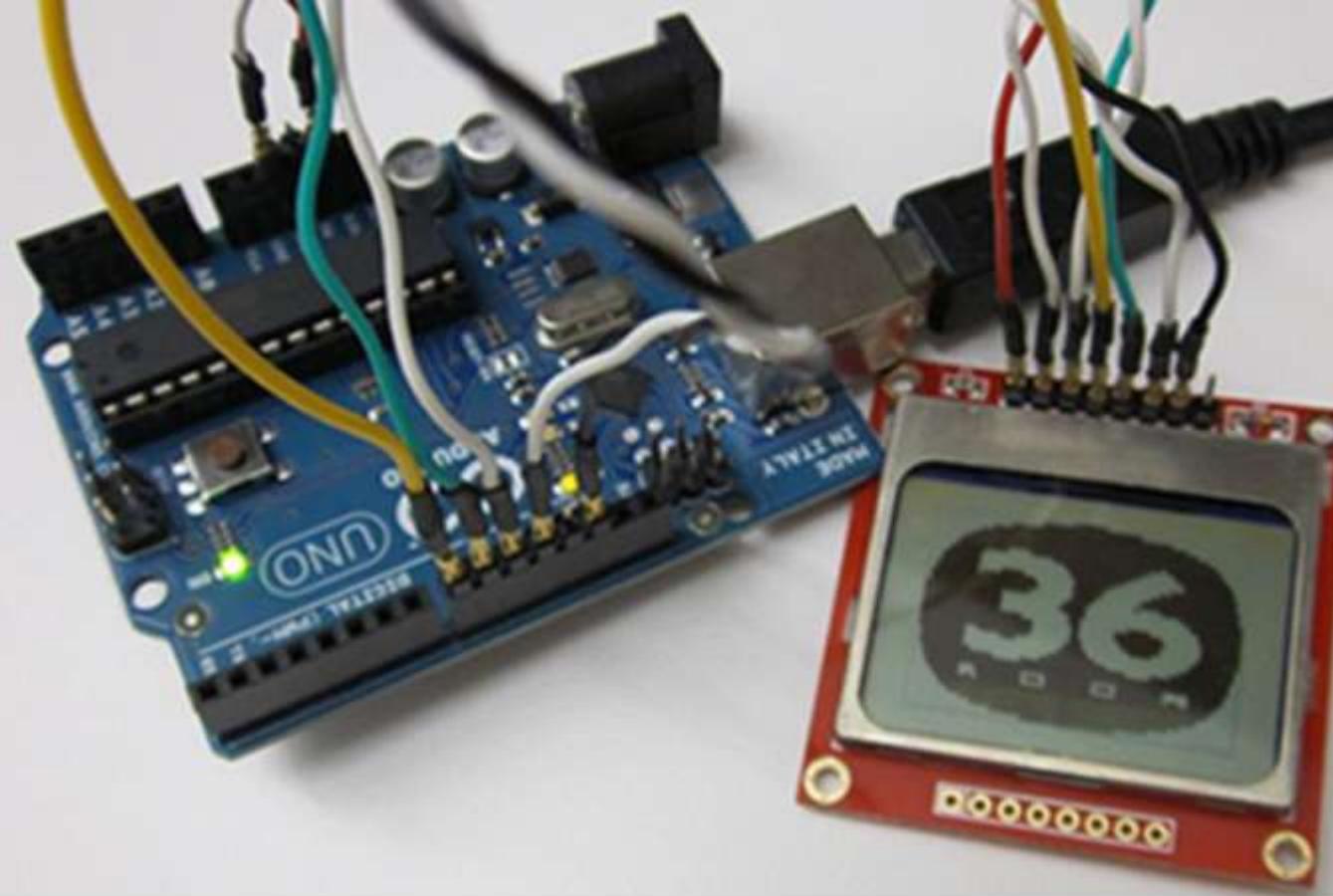
ELECTRONICS

MATERIALS

ADVICE

HOW TO GET STARTED

▸ Visit Webshop https://webshop.stanford.edu   Follow link

▸ Create a login profile with your student ID number

▸ Sign up for a safety orientation (roughly 75 min)

▸ Pay for a lab pass when you show up for the safety orientation ($60 for 1 quarter, $80 for 2, $100 for the academic year)

▸ That's it! Then come in and use the PRL!

SEE YOU SOON!

https://productrealization.stanford.edu

Follow link

Short Break

▶ Pick up your personalized handout packet if you weren't here on Tuesday or have changed your enrollment option

▶ Sign Attendance Sheet

▶ Sign up to Meet with Dave

▶ Hand in your Student Signup Form from Tuesday if you forgot to

SOCIAL MEDIA BREAK

Sign Up to Meet with Dave

Before class in Lathrop 282
Other times in Peterson Building, Room 113

Date & Time	Enter Name & Specify a 15 minute time block
Wednesday, January 9ᵗʰ	
Morning – 8:30am – 10:30am	
Afternoon – 1:00pm – 5:00pm	
Thursday, January 10ᵗʰ	
Morning – 8:30am – 11:30am	
Afternoon – 1pm – 3:15pm	
Before class – 4:00pm in Lathrop 282	

Project Selection & Team Formation

For those working on **team** projects:

- ▶ Read project descriptions

- ▶ Fill out Project Preferences Form during pitches

- ▶ Talk to project presenters after the pitches

- ▶ Hand in Project Preferences Form

- ▶ Your preferences will be posted online
  - ▶ http://engr110.stanford.edu/preferences.html

- ▶ Inform me of team members (teams of 3 only)
  - ▶ Students on the Wait List are not eligible

  - ▶ Name of your team

  - ▶ Name of your selected project

  - ▶ Name your device (after it develops a "character")

Perspectives in Assistive Technology - Winter 2020
Project Preferences for Students Working on Team Projects (3 credit units)

Student name: _____

As each project is pitched, indicate your general interest in one of the first three columns with a ✓ or ✗. At the end of the all the presentations, select your top five project preferences in the fourth column - optionally providing an ordinal (1st, 2nd, 3rd, 4th, 5th) ranking.

☹	☺	☺	Indicate Top Five	Project Name
				1. Camping Cot Project - Abby
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				4. TravelScoot Camping Project - Abby
				5. WHILL Model Ci Enhanced Visibility Project - Abby
				6. Clean House Project - June
				7. Within Reach Project - June
				8. Access to Photography - Paul
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				13. Wheelchair Dancing - Amy
				14. Creative Expression using an Instrumented Wheelchair - Amy

Project Selection & Team Formation

Your preferences will be posted online

- http://engr110.stanford.edu/preferences.html

Considerations for Team Formation and Project Selection

Project preference

▶ All team members should have a strong desire to work on the same project.

Team's engineering skill set

▶ Match the team's skills and expertise with the project needs. (This depends on the solution chosen.)

Personality

▶ There should be a compatible mix of personalities in the team.

Friends and team members

▶ A good friend does not necessarily make a good team mate.

Considerations for Team Formation and Project Selection (2 of 2)

Course load

▶ Can you spend the time working on a team project? Courses like ME103, ME203, ME210, ME218, ME310, and BioE141are very demanding. Are you a TA? Do you have athletic practices?

Team Project Preferences

► Email Dave with selected project, team name, and team members by Tuesday, January 14th

► Project assigned to team first to submit

► Prepare to "hit the ground running" by:
  ► Meeting with your team
  ► Determining common meeting times
  ► Identifying your individual skills
  ► Purchasing PRL Shop Passes
  ► Taking PRL Safety Orientation
  ► Meeting with your Project Suggestor

Why you may want to

Reconsider

If you have enrolled for <u>three units</u>, you may want to consider taking the course for one unit or waiting until next year if:

Take it twice!

1. You are not graduating, or

2. If you have limited fabrication experience, or

3. If you are already taking a project course like ME112, ME203, ME210, ME218, ME310, BioE141, or …

4. If you have to miss lectures or field trips, or

5. You are on the Wait List, or

6. You are not able to devote 4 hours per week to your project.

Team Formation Preparedness

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

1. Convince others to work with you on one of your selected projects

2. Consider working with another student on a project he/she has chosen

3. Keep an Open Mind!

It pays to keep an open mind, but not so open your brains fall out.

- Carl Sagan
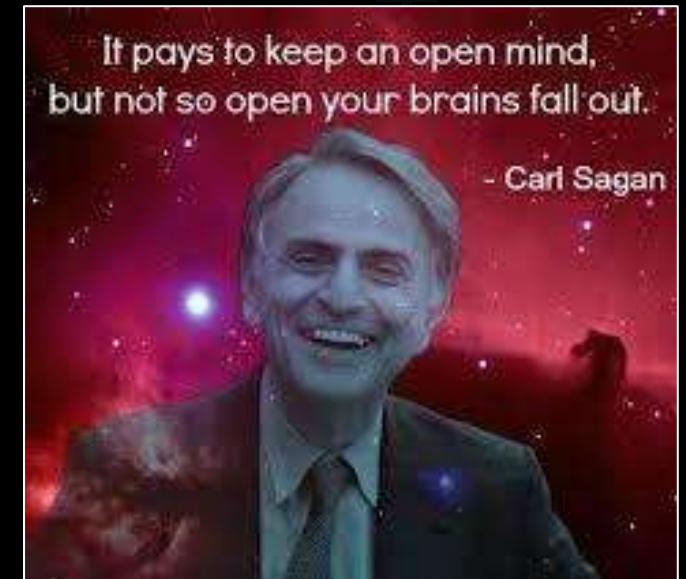
Project Selection & Team Formation

For those working on **1 or 2 credit unit** projects:

▶ Research an assistive technology topic

▶ Work on a paper design of an assistive technology device

▶ Create a work of art

▶ Engage in an aftermarket aesthetic design

▶ Engage in an aftermarket functionality / usability design

▶ Pursue a listed individual project

▶ Optionally pair with another student (new for 2018)

▶ These projects are **not** being pitched

▶ Meet with Dave for suggestions and approval

2020 Candidate One and Two Credit Unit Projects

Individual projects are for students taking the course for one or two credit units with a letter grade.

ENGR110/210
Perspectives in Assistive Technology

David L. Jaffe, MS
Tuesdays & Thursdays   4:30pm - 5:50pm
Lathrop Library - Classroom 282

Contact Information for Teaching Staff & Project Resource People

David L. Jaffe, MS	Course Instructor	davejaffe@stanford.edu
Matteo Zallio, PhD	Fulbright Scholar	mzallio@stanford.edu
Debbie Kenney	Occupational Therapist	kenney5@comcast.net
Doug Schwandt	ME Design Consultant	doug.schwandt@gmail.com
Gary M. Berke	Director of Prosthetics	gmberke@stanford.edu
Jules Sherman	Designer & Entrepreneur	jules@julessherman.com

Course Website: http://engr110.stanford.edu

Project photos and web links - browse to:
http://engr110.stanford.edu/individual-projects.html

Team Projects Pitched by Suggestor

- Projects with Abby:
  - Camping Cot Project
  - Laptray Project
  - Alert Project
  - TravelScoot Camping Project
  - WHILL Model Ci Enhanced Visibility Project
- Projects with June:
  - Clean House Project
  - Within Reach Project
- Project with Paul - Access to Photography
- Projects with Olenka at the Magical Bridge Playground
  - Accessible & Inclusive Playground Attractions (2 projects)

Team Projects Pitched by Suggestor

- Projects with Danny & Stanford:
  - Wheelchair Position & Transfer Project
  - Wheelchair Restraint Project
- Projects with Amy:
  - Wheelchair Dancing
  - Creative Expression using an Instrumented Wheelchair
- Projects with Nick:
  - Arm Rest Project
  - Improved Wheelchair Caster Project

Team Projects Pitched by Suggestor

▶ Project with Nathan & Zia - Wheelchair Accessories Project

▶ Project with Ben - Laptray for Ben

▶ Project with Jerry - Smartphone and Tablet Holder for Easy Viewing and Stability

Projects Suggested by Dave

▶ Creative Expression

▶ Designing Your Afterlife

▶ Student-defined projects

On deck: Abby

Projects with Abby

▶ **Camping Cot Project** - Explore designs for a camping cot that Abby will find to be easy to assemble and disassemble independently.

▶ **Laptray Project** - Explore designs for a wheelchair accessory that will aid Abby in performing common tasks. Anticipated laptray uses include: a drawing / writing / work surface, a support for a laptop, and a platform for eating.

▶ **Alert Project** - Explore designs to alert people in Abby's path.

▶ **TravelScoot Camping Project** - Explore designs for an improved device for transporting Abby's camping items.

▶ **WHILL Model Ci Enhanced Visibility Project** - Explore designs to enhance the night time visibility of Abby's new wheelchair.

On deck: June

Abby's Background

▶ "I am mobility impaired, 4'11" tall, and only able to lift 10 pounds. I am very active in advocacy and social justice issues, especially focusing on individuals with disabilities. I speak at national conventions for many organizations."

▶ "Last year I acquired a WHILL Model M and in November I purchased a Model Ci. WHILL is a Japanese company with the US headquarters in San Carlos, CA, about 10 miles from my home. The WHILL Model M is 4 wheel drive, and both wheelchairs will operate on most terrains."

▶ Challenges to address:
  ▶ Camping Cot
  ▶ Laptray
  ▶ Alert
  ▶ TravelScoot Camping
  ▶ WHILL Model Ci Enhanced Visibility

Camping Cot Project

Here are the parts of the camping cot, with the bed shown on the right. Explore designs for a camping cot that Abby will find to be easy to assemble and disassemble independently.

Play video

Laptray Project

Explore designs for a wheelchair accessory that will aid Abby in performing common tasks. Anticipated laptray uses include: a drawing / writing / work surface, a support for a laptop, and a platform for eating.

Play video

Alert Project

Explore designs to alert people in Abby's path.

Play video

TravelScoot Camping Project

Explore designs for an improved device for transporting Abby's camping items.

Play video

WHILL Model Ci Enhanced Visibility Project

Explore designs to enhance the night time visibility of Abby's new wheelchair.

Projects with June

- Clean House Project
- Within Reach Project

On deck: Paul

Clean House Project

- **Clean House Project** - June Fisher

- **Background**: June is an older adult who uses a rollator for balance and stability when moving around her San Francisco home.

- **Problem**: June's use of her rollator makes it difficult for her to perform home cleaning tasks independently.

- **Aim**: Explore designs to provide a safe, effective, and independent means of performing common household cleaning tasks

- **Criteria**: The solution must be safe to use, easy to operate, and be compact to store.

Within Reach Project

▶ **Within Reach Project** - June Fisher

▶ **Problem**: Currently available step stool solutions do not meet June's needs: some are too tall, others have a stepping area that is too small, and most do not have hand-holds to provide needed balance and stability during reaching. Finally many step stools are heavy and bulky, making them difficult to move and position.

▶ **Aim**: Explore designs to provide a safe and stable means of accessing items on upper shelves

▶ **Criteria**: The solution must be easy to move and position, offer a sense of security during use; have a wide, non-slip surface; provide the proper height advantage; and be collapsible for storage.

Project with Paul

▶ Access to Photography

▶ Explore designs that would enable Paul to enjoy photography.

Access to Photography

▶ "I am a creative person by Nature. I work as a software engineer where I can express some of my creativity. However, since I am unable to use my arms, I am limited in how I can express my creativeness. I do like to cook and have taught my son how to cook."

▶ "I often see a view I would like to take a photo of mostly spontaneously."

▶ "As I was walking home from work, I was wondering if it might be possible to adapt a camera or smart phone so I could take photos independently. It would be great if there were a mechanism or device that would allow me to orient the phone and take a photo with the very limited function I have."

Projects with Olenka at the Magical Bridge Playground

▶ **Accessible and Inclusive Playground Attractions** - Explore designs to improve access to and navigation around the playground, as well as to create new play and educational experiences incorporating multiple senses, actions, and outcomes for all playground users and visitors, especially those with visual impairments and diminished fine motor skills.

On deck: Danny & Stanford

Magical Bridge Playground

[Magical Bridge Playground](#) founder, Olenka Villarreal often says, "The playground is a child's first classroom."

Introducing children as early as possible to the variety of people in their community is our best hope for removing social and physical barriers.

How it Happened

It all started with a mom, two daughters, and a playground need

Determined to create the kind of outdoor space that both her disabled and non-disabled daughters (and all their friends!) would love, Olenka Villarreal mobilized a team of volunteers to fulfill a dream to create such a place.

In 2015, Magical Bridge Playground opened to great enthusiasm

Since then, the success of the playground has inspired an awareness that today's parks leave far too many behind.

With long-time friend and team member, Jill Asher, Olenka created Magical Bridge Foundation as a non-profit organization in 2016

The foundation is beginning to extend its reach beyond the Bay Area and continues to bring the joy of play, kindness and new friendships to as many families as possible.

ADA "Accessibility" Just Isn't Enough

▶ Not a single public playground has been designed with everyone's unique play needs in mind.

▶ ADA standards do not meet the needs of many living with a disability.

Magical Bridge Playground, Palo Alto

Seven Unique Zones: Playhouse & Tree Deck, Slide Mound, Spinning Zone, Picnic & Performance Area, Swinging & Swaying Zone;,Music Zone, and Tot Play Zone

The Playhouse is two stories and the Tree Deck has two bridges including a "rope" bridge. The entire structure is wheelchair accessible.

Playground features are a mix of custom designed equipment and off-the-shelf technology often applied in unique ways.

Seven years of research went into this playground design.

► Construction MAGIC is underway at Red Morton Park in Redwood City! Magical Bridge Playground in Redwood City will welcome and serve visitors of all abilities and disabilities in San Mateo County and beyond! We plan to complete construction and open to the public in Summer 2019.

► Magical Bridge Playground Projects are also underway in Morgan Hill, Mountain View, and Sunnyvale.

Be Part of the Magic - Join Us!

Olenka Villarreal
olenka@magicalbridge.org

Projects with Danny & Stanford

- ▶ Wheelchair Position & Transfer Project
- ▶ Wheelchair Restraint Project

On deck: Amy

Projects with Danny & Stanford

▶ Meet Danny & Stanford

▶ Cerebral Palsy & Cortical Vision Impairment

Wheelchair Position & Transfer Project

▶ Explore design solutions that would allow Danny to position himself in his wheelchairs independently and to better assist his caregiver during wheelchair transfers.

Wheelchair Restraint Project

▶ Explore design solutions that would make it easier for Danny to buckle himself into his wheelchairs independently.

Smile and the World Will Smile Back

Projects with Amy

- Wheelchair Dancing
- Creative Expression using an Instrumented Wheelchair

On deck: Nick

Wheelchair Dancing

▶ Explore designs to provide encouragement and enhance the dance experience for both wheelchair users and individuals who can not stand for long periods.

Dancing Frequently Reduces the Risk of
Dementia by 76%!

New England Journal of Medicine, 2003

Dancing Reduces **46%** Cardiovascular Disease Death

American Journal of Preventive Medicine, 2016

Creative Arts Therapy (Music/Dance/Art) Improves Cancer Patients'
Quality of Life by 50%, Reduces Pain by 59%!

The JAMA Network, 2013

Exercise May Make Tumors Less Aggressive

American Cancer Society, 2015

Penguin Coldcap to Save My Hair from Chemo

Problem: Isolated and Lonely, Tough Behavior Challenge

Loneliness is as damaging as smoking 15 cigarettes a day

- Leads to depression, anxiety, pain, falling, hostility, weight issues, diabetes, and suicidal thoughts.

- Caregivers/patients do not have enough exercise.

- Social connection from home is difficult.

- Current solutions are not adequate.

40% of Alzheimer's caregivers die before care recipient.

62% of teenagers feel lonely, especially those with caregiver parents.

Creative Arts Therapy (music/dance/art) improves cancer patients' **Quality of Life by 50%, reducing pain by 59%!**

The JAMA Network, 2013

View video

Imagine...

1 Visual Feedback?

- Colorful lights?
- Seasonal celebration?

2 Vibration Pads?

- Directional guidance?
- Synchronize with music or singing?

3 Tracking Movement? Auto Response?

- Provide feedback, encouragement?
- Confirm movement efficacy
- Personalized recommendation using AI?
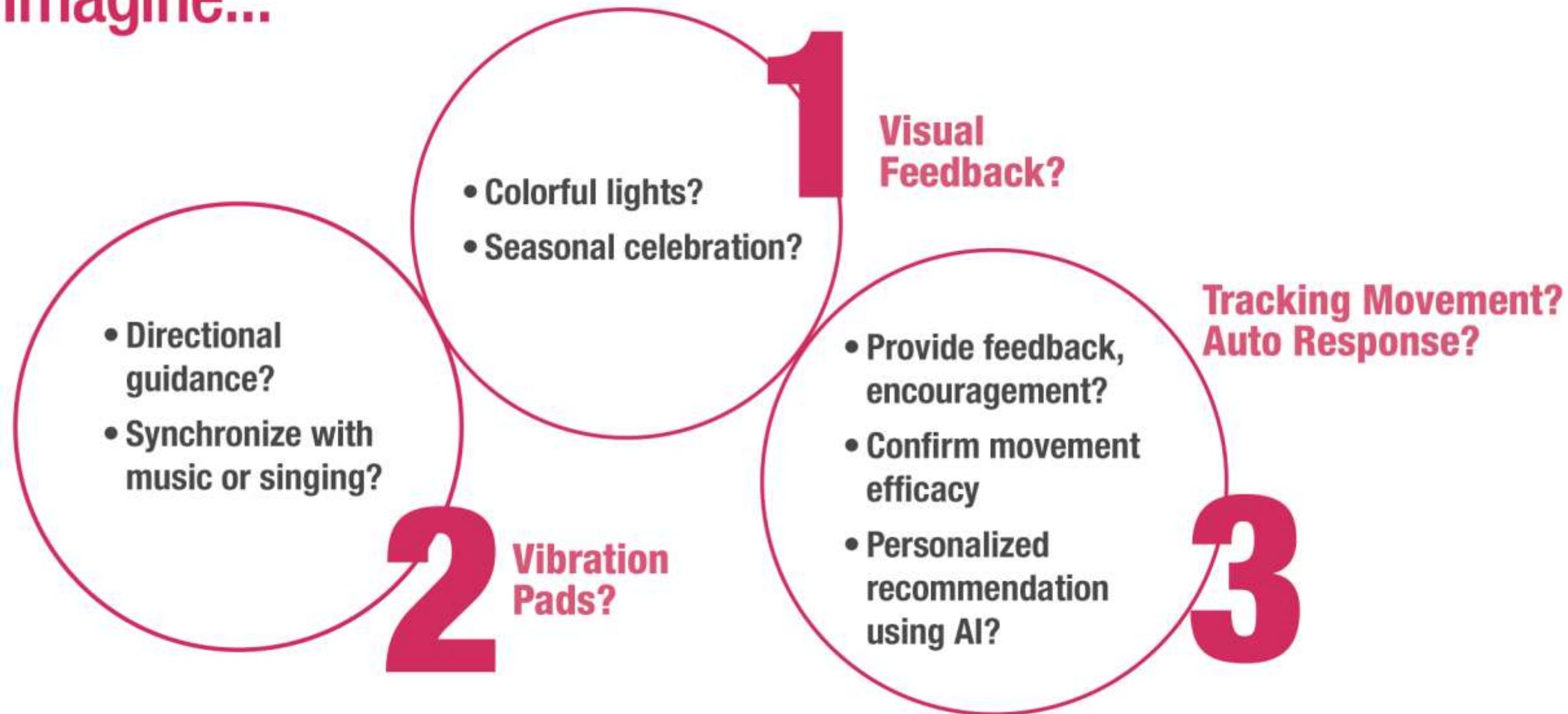
Creative Expression using an Instrumented Wheelchair

► Explore ways to enhance creative expression for people with disabilities, especially those who use wheelchairs. This could include the creation of new activities or fabrication of new tools.
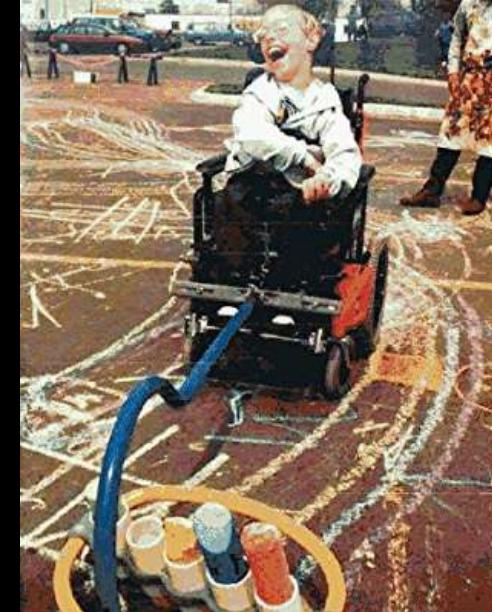
Projects with Nick

- Arm Rest Project

- Improved Wheelchair Caster Wheel Project

On deck: Nathan & Zia

Arm Rest Project

- Explore designs that will address several problems that Nick experiences with the stock Dual Post Adjustable "Flip-back" Arm Rests on his Quickie Model GP wheelchair.

Improved Wheelchair Caster Wheel Project

► Explore non-castering omni-wheels as a caster wheel replacement

Project with Nathan & Zia

▶ Wheelchair Accessories Project

▶ Explore wheelchair accessories that will benefit Nathan.

On deck: Ben

Introduction

- I am Zia Oboodiyat
  - BS EE, MS Management with 36 years experience in aerospace industry

- My son is Nathan Oboodiyat
  - Quadriplegic, Spastic Cerebral Palsy

Statement of Problem

▶ Nathan has limited use of his left hand only

▶ Assistive technology could be of enormous help to him

▶ Nathan's current assistive accessories:
   ▶ Mirror attached by a rod to his chair
   ▶ Light with a switch
   ▶ Smart device holder attached to the joystick

▶ Observations:
   ▶ Every digital device requires its own source of power
   ▶ Each feature is independent and costs are high

Nathan dressed for Halloween

Nathan has limited use of his left hand only

Mirror attached by a long rod to the wheelchair

Mirror

Light with switch

Smart device holder attached to the joystick

Problems that could be addressed

- Health monitoring feature
- Proximity sensing
- Ability to communicate with surrounding environment
  - Open close doors, turn on or off lights, control TV, search for information etc.
- Emergency alarm (both light and sound)
- Other

Nathan's Goals / Prototype desired features 1 of 2

- Nathan's Goals
  - Improve safety, capability, and quality of life through Assistive Technology

- Wheelchair Accessories possibilities:
  - Mechanism to hold a digital device
  - Camera for rearview monitoring
  - Automatically activated guiding lights
  - Manually activated (voice command) alarm (light and sound)
  - Communication with surrounding environment
  - Multiple USB ports for powering the digital devices (smart phone, Alexa, lights, etc)

Nathan's Goals / Prototype desired features 2 of 2

- ► More Wheelchair Accessories features and design criteria:
  - ► Cup holder
  - ► Space within the tray for medicine, tooth paste, tooth brush
  - ► Mechanism to install or remove the tray
  - ► Lightweight
  - ► Must not interfere with normal wheelchair functions

Skills needed

▶ Mechanical and electrical engineering depending on the nature of the solution pursued

▶ Nathan and I can help:

  ▶ I have build numerous devices for Nathan

  ▶ We are knowledgeable of existing devices and resources

  ▶ Contact us for more information

▶ We would like to work with a team that likes to have fun and wants to make a difference in Nathan's life

Nathan and I appreciate this opportunity

Project with Ben

▶ Laptray for Ben

▶ Explore designs for a custom laptray for Ben's Omeo wheelchair.

On deck: Jerry

Project with Jerry

- **Smartphone and Tablet Holder for Easy Viewing and Stability**

- Explore designs that would provide a secure and stable platform for Jerry to view his table or smartphone display in a variety of locations during a variety of activities.

On deck: Dave

Dave's Suggested Projects

▶ Creative Expression

▶ Designing Your Afterlife

▶ Student-Defined Team Projects

Creative Expression

▶ Creative Expression - Dave

▶ Explore ways to enhance creative expression for people with disabilities. This could include the creation of new activities or fabrication of new tools.

Photos Tim Smith

Designing Your Afterlife

▶ Designing Your Afterlife - Dave

▶ Explore ways to preserve one's essence after death. In the technology extreme, this might manifest itself as an interactive system that responds to queries, retells stories, relates experiences, shares expertise, and expresses humor. The pre-dead user would be able to create and program his / her eternal computer-based persona before her / his demise.

Student-defined Team Projects

- **Student-defined Team Projects** - Dave

- Interview, observe, and discuss assistive technology problems with an individual with a disability or older adult. Address their desire to participate in one of the following activities by designing an adaptation to an existing device / tool or creating a new, more useful one:

    - Activities of daily living

    - Sports and exercise

    - Leisure activities and hobbies

Sample One or Two Unit Project - Assistive Technology Maker Space Projects

Greg Brown

▶ Problem: "I am supporting schools that have Maker Spaces, but they lack meaningful, real-world, open-ended challenges for students to do in them. The schools need inspirational challenges and basic support resources (background on the problem, design constraints, and success criteria)."

▶ Aim: Design and document four example Maker Space projects for schools to offer. These projects should focus on assistive technology and involve the design, fabrication, and testing of a prototype device or tool that benefits a person with a disability or an older adult.

This is the last project

Open Question Time and Non-Random Access

Who is working on team projects?

Get more info from project suggestor

Identify others interested in same projects

RANDOM: Made, done, happening or chosen without method or conscious decision.

What are your project preferences?

Rank your top choices

Hand in your Project Preference Sheet!

Have course questions? Ask Dave

See Dave if you are working on an individual project

Reset the Tables & Chairs