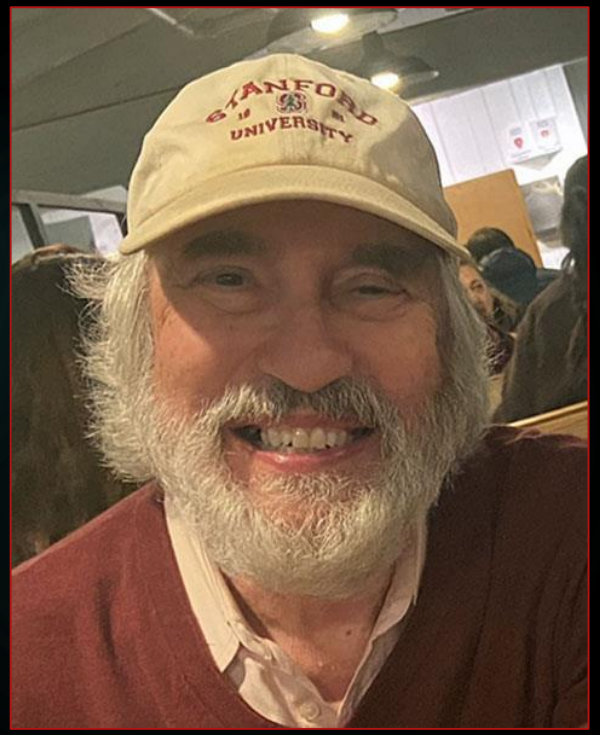
January 8, 2026

Team Project Pitch Day

# ENGR110/210
# Perspectives in Assistive Technology



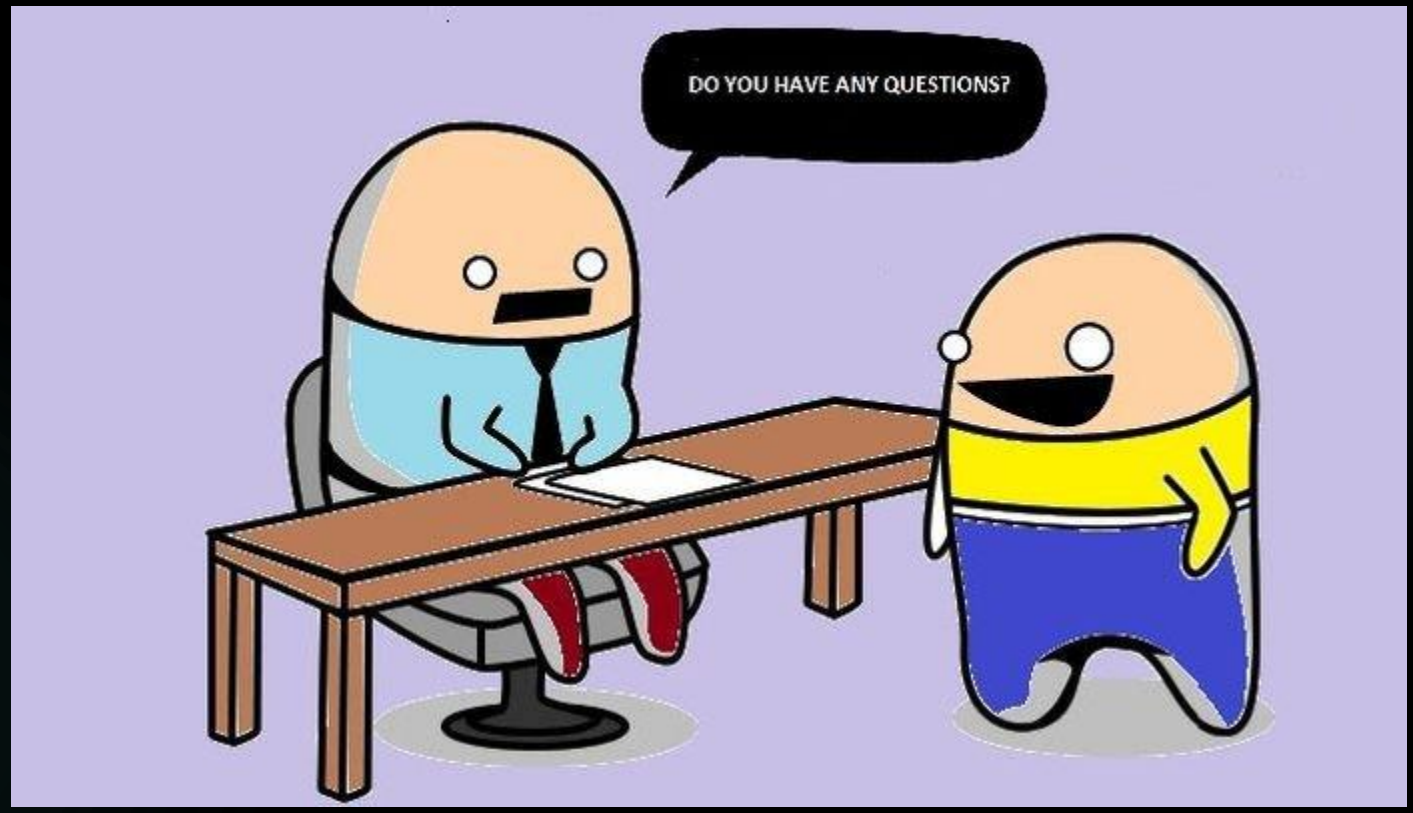

David L. Jaffe, MS

Instructor

20

Years

# Do You Have Any Questions?



# Thanks to:

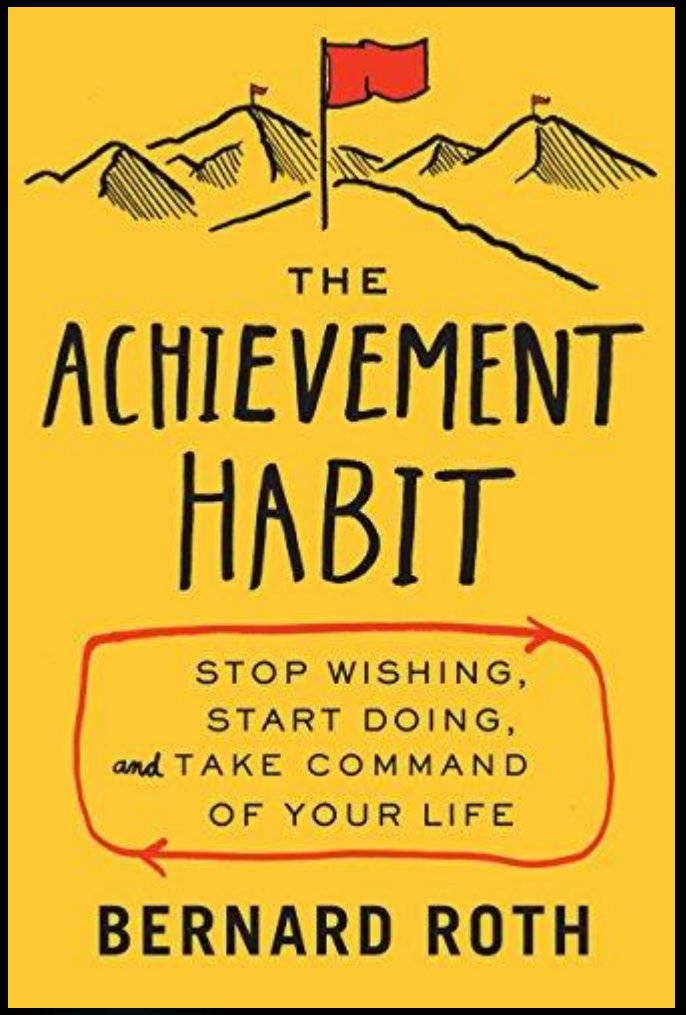
- Students:
  - Enrolling and participating in the course
  - Filling out lecture evaluations and comments
- Haas Center for Public Service:
  - Funding
- Community Members:
  - Participating and "adding to the conversation"
- Project Suggestors:
  - Suggesting great projects
  - Working with students

# Suggestor

actor, adjudicator, adjustor, advisor, alienator, animator, aviator, capacitor, competitor, consolidator, creator, defector, dictator, director, discriminator, doctor, eliminator, estimator, evaluator, fabricator, facilitator, innovator, instructor, interrogator, investigator, liberator, navigator, orator, perpetrator, predecessor, predictor, procrastinator, proctor, professor, renovator, resistor, sponsor, **suggestor**, suitor, supervisor, tailor, traitor, visitor

# Missing a required class session?

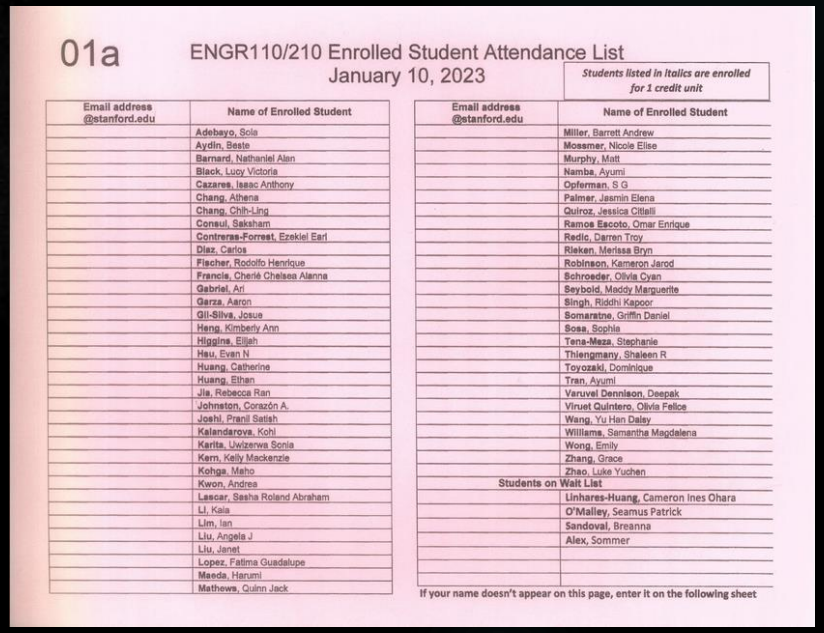
1. Let me know (beforehand, if possible) by email
2. Do not provide a reason
3. I will provide makeup instructions
4. Make up the missed class session promptly

# Enrolled Student Attendance Sheet

All enrolled and auditing students: Please fill out pink Attendance Sheet in every class session to verify your presence.

- No need to include “stanford.edu”



01a

ENGR110/210 Enrolled Student Attendance List
January 10, 2023

*Students listed in Italics are enrolled for 1 credit unit*

| Email address @stanford.edu | Name of Enrolled Student |
|---|---|
| | Adebayo, Sola |
| | Aydin, Beste |
| | Barnard, Nathaniel Alen |
| | Black, Lucy Victoria |
| | Cazares, Isaac Anthony |
| | Chang, Athena |
| | Chang, Chih-Ling |
| | Consul, Saksham |
| | Contreras-Forrest, Ezekiel Earl |
| | Diaz, Carlos |
| | Fischer, Rodolfo Henrique |
| | Francis, Cherié Chelsea Alanna |
| | Gabriel, Ari |
| | Garza, Aaron |
| | Gil-Silva, Josue |
| | Heng, Kimberly Ann |
| | Higgins, Elijah |
| | Hsu, Evan N |
| | Huang, Catherine |
| | Huang, Ethan |
| | Jia, Rebecca Ran |
| | Johnston, Corazón A. |
| | Joshi, Pranil Satish |
| | Kalandarova, Kohi |
| | Karita, Uwizerwa Sonia |
| | Kern, Kelly Mackenzie |
| | Kohga, Maho |
| | Kwon, Andrea |
| | Lascar, Sasha Roland Abraham |
| | Li, Kaia |
| | Lim, Ian |
| | Liu, Angela J |
| | Liu, Janet |
| | Lopez, Fatima Guadalupe |
| | Maeda, Harumi |
| | Mathews, Quinn Jack |

| Email address @stanford.edu | Name of Enrolled Student |
|---|---|
| | Miller, Barrett Andrew |
| | Mossmer, Nicole Elise |
| | Murphy, Matt |
| | Namba, Ayumi |
| | Opferman, S G |
| | Palmer, Jasmin Elena |
| | Quiroz, Jessica Citlalli |
| | Ramos Escoto, Omar Enrique |
| | Redic, Darren Troy |
| | Rieken, Merissa Bryn |
| | Robinson, Kameron Jarod |
| | Schroeder, Olivia Cyan |
| | Seybold, Maddy Marguerite |
| | Singh, Riddhi Kapoor |
| | Somarstne, Griffin Daniel |
| | Sosa, Sophia |
| | Tena-Meza, Stephanie |
| | Thiengmany, Shaleen R |
| | Toyozaki, Dominique |
| | Tran, Ayumi |
| | Varuvel Dennison, Deepak |
| | Viruet Quintero, Olivia Felice |
| | Wang, Yu Han Daisy |
| | Williams, Samanthe Magdalena |
| | Wong, Emily |
| | Zhang, Grace |
| | Zhao, Luke Yuchen |
| **Students on Wait List** | |
| | Linhares-Huang, Cameron Ines Ohara |
| | O'Malley, Seamus Patrick |
| | Sandoval, Breanna |
| | Alex, Sommer |

If your name doesn't appear on this page, enter it on the following sheet

# Leftovers from Tuesday

- Persistent vegetative state - loss of higher brain functions, now called unresponsive wakefulness syndrome
- Everybody has something beneficial to contribute
- Invisible disabilities

Terry Schiavo

# Leftovers from Tuesday

- Assistive Technology = AT
- "~~Assistive Tech~~"
- "Wheelchair Bound"

# Tuesday, January 13th

Creating Assistive Technologies - Understanding the Problem

Gayle Curtis - UX Design Consultant

# Today's Agenda

1. Introduction of Course Resource People
2. Overview of PRL and Room 36 Resources
3. Considerations for Project Selection
4. Brief break
5. Project Pitches
6. Open time with Project Suggestors

# Additional Course Resource People

- Deborah E. Kenney, MS, OTR/L
- Douglas F. Schwandt, MS

# Benjamin Phelps

PRL Course Assistant &
Former ENGR110 Student

STANFORD PRODUCT REALIZATION LAB

# PRL Overview

- Design and Manufacturing
- Open to any current Stanford student (**no fee!**)
- 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

* Excluding for-profit projects and weapons or other safety risking projects

STANFORD PRODUCT REALIZATION LAB

# PRL Leadership Team

**Dan Somen**
Technical Director, Lecturer

**Anna Boslough**
Lecturer

STANFORD PRODUCT REALIZATION LAB

# 2026 PRL Course Assistants

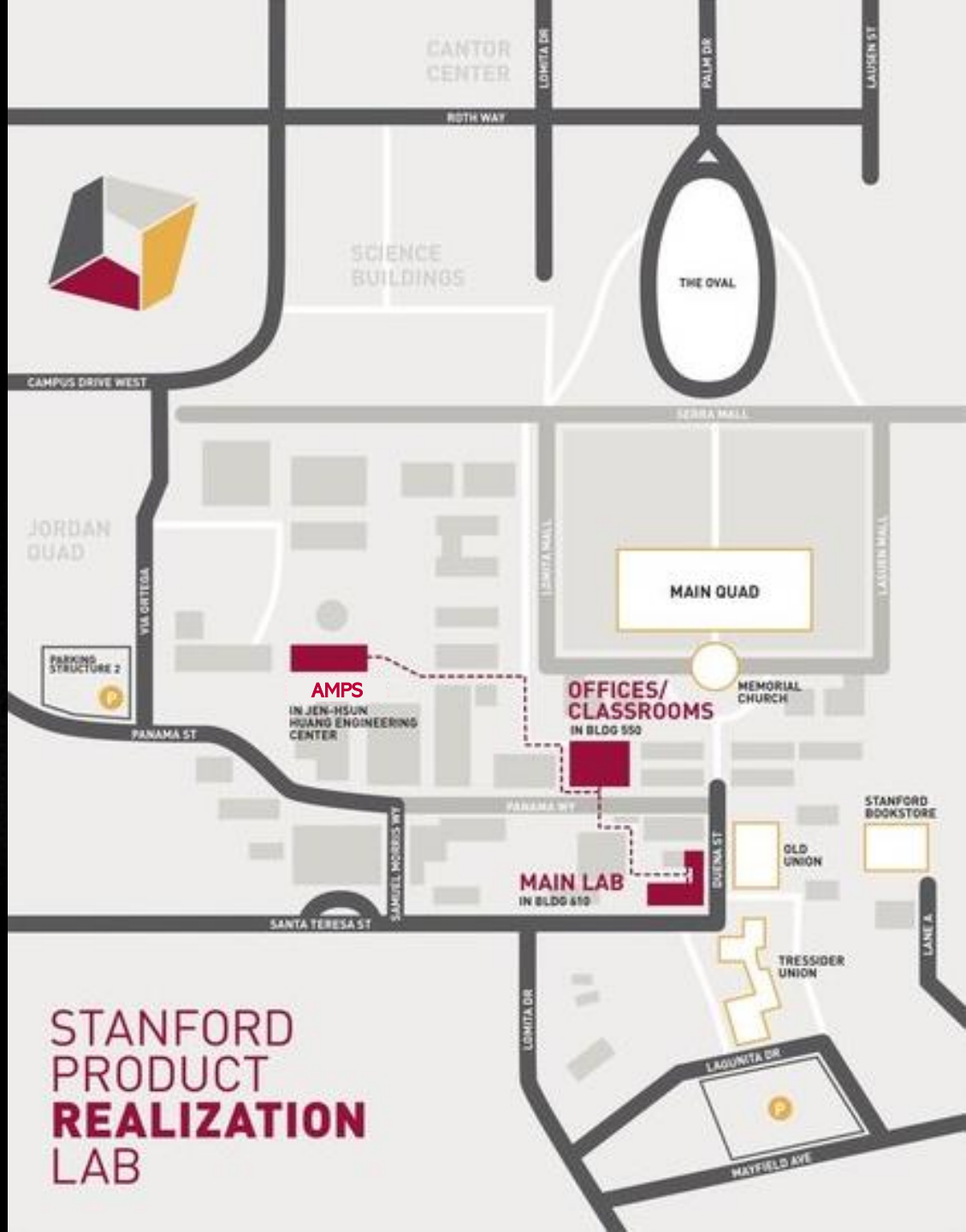
STANFORD PRODUCT
REALIZATION LAB

# How to Get There

## Building 610

## AMPS

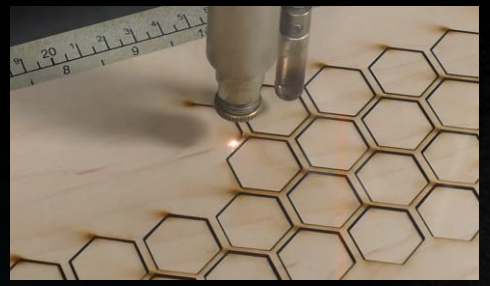
Basement of Huang



STANFORD PRODUCT REALIZATION LAB

# Resources: AMPS

Rapid Prototyping



Laser Cutting

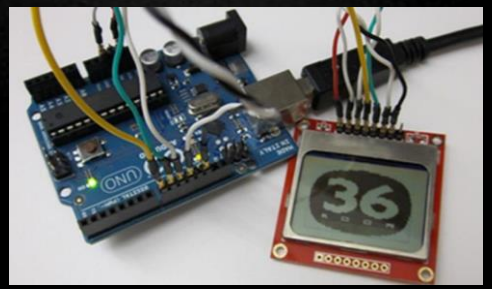
3D Printing

Sewing

3D Scanning

Vinyl Cutting


Foam Cutting



Electronics

Photo Booth

Materials*

*free scrap materials and some materials available for purchase at cost

STANFORD PRODUCT REALIZATION LAB

# Resources: BLDG 610

Machining

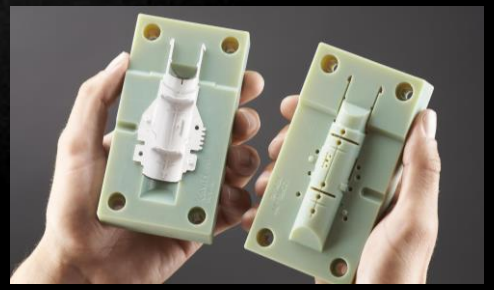
Casting

Welding

Sheet Metal Forming

Woodworking

Silicone Molding



Injection Molding

Materials*

*free scrap materials and some materials available for purchase at cost

STANFORD PRODUCT
REALIZATION LAB

# The Most Important Resource …
# COMMUNITY!

- Come meet other makers
- Get advice / support from CAs and fellow students
- Make friends!
- Learn together

STANFORD PRODUCT REALIZATION LAB

# How to Get Started

- Visit Webshop https://webshop.stanford.edu
- Create a login profile with your student ID number
- Take the online safety quiz (roughly 10 mins)
- Sign up for and complete in-person safety training (roughly 45 mins)
- That's it! Then come in and use the PRL!

STANFORD PRODUCT
**REALIZATION** LAB

# SEE YOU SOON!

https://productrealization.stanford.edu

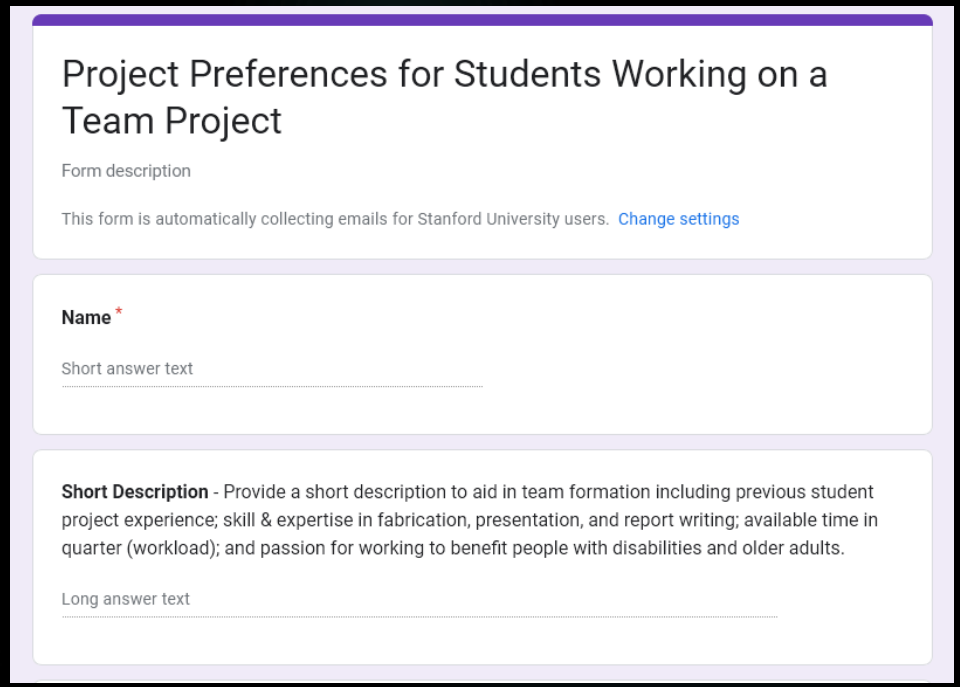
# Candidate Team Projects

- For students taking the course for **three credits:** Use Google Form at **http://engr110.stanford.edu/01b**
- As each project is pitched, review its project description on the course website
- Take notes to help you determine your interest priority.
- At the end of all presentations, review your notes and select your **top five** project preferences.
- Speak to the Project Suggestors after the pitches for more information.
- Don't forget to **submit** the form today.
- I will compile all project choices on the course website to facilitate project selection and team formation (3 or 4 students per team)

# Team Project Selection

For those working on a Team Project:

- Bring up Google Form: http://engr110.stanford.edu/01b
- Read team project descriptions on course website http://web.stanford.edu/class/engr110/team-projects.html
- Fill out Project Preferences Form during pitches
- Talk to Project Suggestors after the pitches


Project Preferences for Students Working on a Team Project

Form description

This form is automatically collecting emails for Stanford University users. Change settings

Name *

Short answer text

**Short Description** - Provide a short description to aid in team formation including previous student project experience; skill & expertise in fabrication, presentation, and report writing; available time in quarter (workload); and passion for working to benefit people with disabilities and older adults.

Long answer text

# Team Project Selection

For those working on a Team Project:

Kitzmann, Mathilda

Senior
ME & Psychology

**Short Description:**

I am a senior in MechE on the product realization track. Through that I got some experience in manufacturing methods. In my capstone project we are working on the manufacturing process of a wheelchair.

- Project preferences will be posted on the course website. Instructions and the link will be provided after I finish entering data.

Winter 2024 - ENGR110/210 Student Team Project Preferences -

| Students ▼ / Projects ► | Project Name ► | Treats for Nathan | Enhanced Visibility | Rain Shield | Storage Solution | Universal Holder | Nathan's Leash | Magical Bridge 1 | Magical Bridge 2 | Swimming Prosthetic | Dancing with AT | Dog Kennel | Poop Manage | Laptray Project | Treats for Korey | Designing Afterlife | Creative Expression | Student-defined |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Suggestor ► | Abby | Abby | Abby | Abby | Abby | Abby | Olenka | Olenka | Gary | Kinematic | Danny | Danny | Danny | Danny | Dave | Dave | Dave |
| **Bell**, Spencer | | | | | | | | | | | | | | | | | | |
| **Buck**, Ginger Ann | | | | | | | | | | | | | | | | | | |
| **Burrell**, Lucy McCarthy | | | | | | | | | | | | | | | | | | |
| **Charity**, Emma Tyree | | | | | | | | | | | | | | | | | | |
| **Contreras-Forrest**, Ezekiel Earl | | | | | | | | | | | | | | | | | | |
| **Correa**, Isabella Cailey | | | | | | | | | | | | | | | | | | |
| **Dao**, Hana Diem | | | | | | | | | | | | | | | | | | |
| **Diaz**, Carlos | | | | | | | | | | | | | | | | | | |
| **Hsia**, Senkai | | | | | | | | | | | | | | | | | | |
| **Ibrahim**, Imaan Jasmine | | | | | | | | | | | | | | | | | | |
| **Jemal**, Nejat Shah | | | | | | | | | | | | | | | | | | |
| **Keneley**, Lance A | | | | | | | | | | | | | | | | | | |
| **Kitzmann**, Mathilda | | | | | | | | | | | | | | | | | | |
| **Li**, William Z | | | | | | | | | | | | | | | | | | |
| **Linhares-Huang**, Cameron Ines Ohara | | | | | | | | | | | | | | | | | | |
| **Miraftab-Salo**, Rahi | | | | | | | | | | | | | | | | | | |
| **Moore**, Dylan James | | | | | | | | | | | | | | | | | | |
| **Painter**, Jackson Wells | | | | | | | | | | | | | | | | | | |
| **Park**, Emily | | | | | | | | | | | | | | | | | | |
| **Ramos**, Liam Jose | | | | | | | | | | | | | | | | | | |
| **Sanchez**, Maria Isabel | | | | | | | | | | | | | | | | | | |
| **Schroeder**, Olivia Cyan | | | | | | | | | | | | | | | | | | |
| **Sogade**, Tomi Olumitomi | | | | | | | | | | | | | | | | | | |
| **Stein**, Renn Taylor | | | | | | | | | | | | | | | | | | |
| **Ung**, Iris Vy | | | | | | | | | | | | | | | | | | |
| **Woo**, Marisa Wenshan | | | | | | | | | | | | | | | | | | |
| **Wu**, Song | | | | | | | | | | | | | | | | | | |

# Considerations for Team Project Selection

**Course load**

- Students average 5 hours/week on their project in this course.
- Can you spend the time working on a project? Courses like ME103, ME170, ME203, ME210, ME218, ME310, and BioE141are very demanding.
- Are you a TA or CA?
- Do you have athletic practices?

**Fabrication skills**

- Have you built anything before?

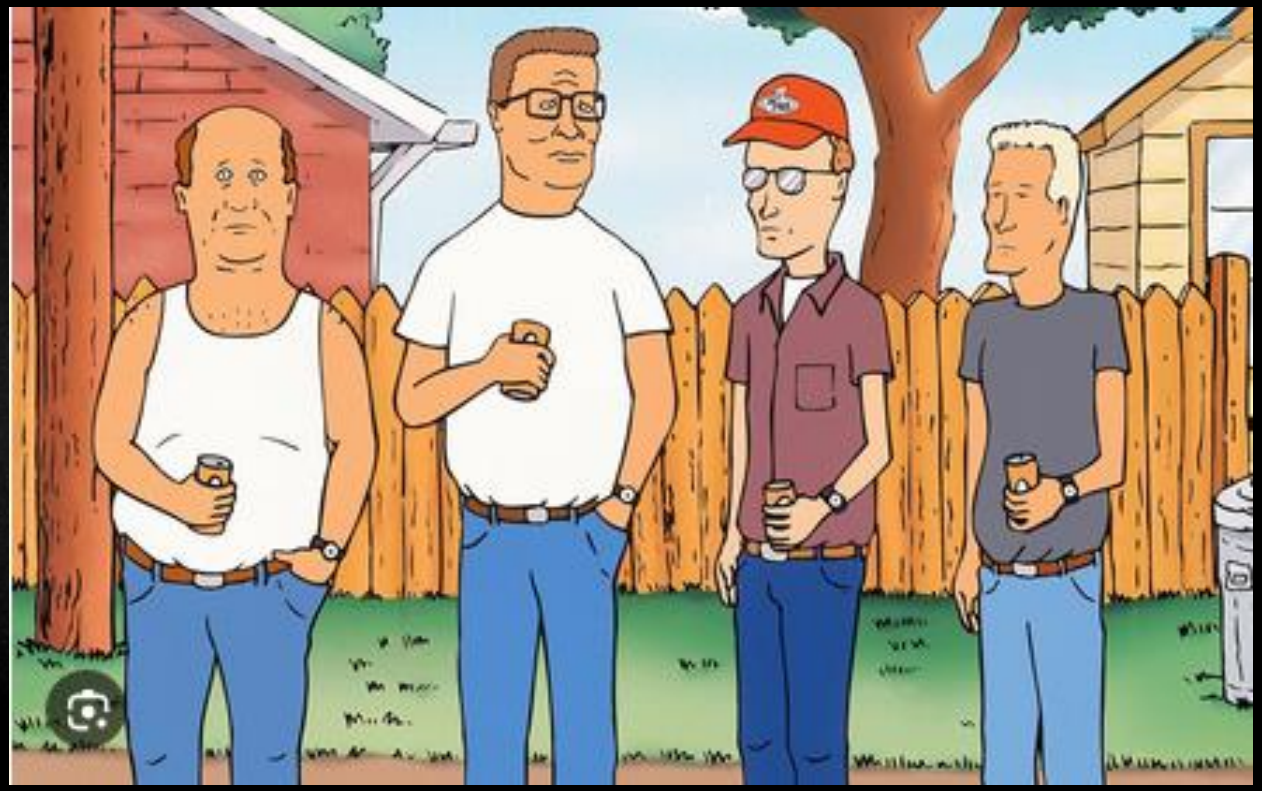
# Considerations for Team Project Selection

**Choosing Teammates**

- Choose good teammates
- A good friend or classmate may not make
- a good teammate
- It would be good to have a team member
- with fabrication experience
- It would be good to have a team member with experience outside engineering.

**Would you be a good team member?**

# Optimal Team Size



Which team is going to have a more difficult time?

# Reasons

1. It is much harder for a team of four to find common available times to work on their project.

2. The **Ringelmann Effect** is the tendency for individual members of a team to become increasingly less productive as the size of their team increases.

# Why you may want to


If you have enrolled for three units, 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, ME170,ME203, ME210, ME218, ME310, BioE141, or …
4. If you have to miss lectures or field trips, or
5. You are unable to devote 5 hours per week to your project.


# Team Project Selection

For those working on 3 credit unit Team Projects:

- Pursue project pitched by Suggestor
- Meet with Dave for suggestions
- Weekly Progress Reports - alternate between:
  - In-person meetings (with Dave or Tori)
  - Emailed progress report
- Photo documentation of project
  - Photos of individual students or entire student team for Report & Presentation Cover Page
  - Photos of team working with user and fabricating prototypes
  - Photos of final prototype stand-alone and with user and with user & team

# Individual Project Selection

For those working on 1 credit unit Individual Projects:

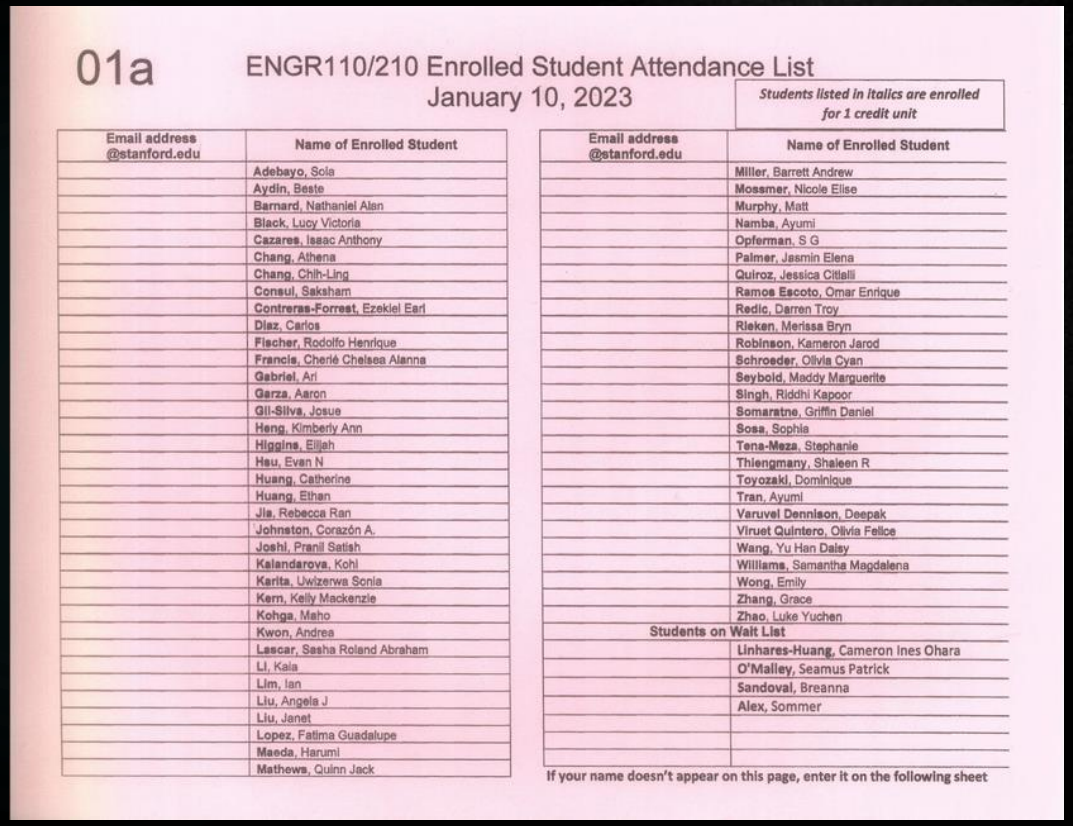
- Research an assistive technology topic
- Work on a CAD design of an assistive technology device
- Fabricate a functional prototype
- Build an appearance model
- Create a work of art
- Engage in an aftermarket aesthetic design
- Engage in an aftermarket functionality / usability design
- Optionally pair with another student for Understanding the Problem and Brainstorming
- Meet with Dave for suggestions and approval

# Project Preferences

- Email Dave with selected project, team members, project name (optional) by Tuesday, January 13th
- First to email gets the project
- Prepare to "hit the ground running" by:
  - **Meeting with your teammates**
  - Connecting with your Project Suggestor
  - Connecting with Dave or Tori

# Short Break

- Fill out Class Session Attendance Sheet



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January 10, 2023

*Students listed in italics are enrolled for 1 credit unit*

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| | Cazares, Isaac Anthony |
| | Chang, Athena |
| | Chang, Chih-Ling |
| | Consul, Saksham |
| | Contreras-Forrest, Ezekiel Earl |
| | Diaz, Carlos |
| | Fischer, Rodolfo Henrique |
| | Francis, Cherié Chelsea Alanna |
| | Gabriel, Ari |
| | Garza, Aaron |
| | Gil-Silva, Josue |
| | Heng, Kimberly Ann |
| | Higgins, Elijah |
| | Hsu, Evan N |
| | Huang, Catherine |
| | Huang, Ethan |
| | Jia, Rebecca Ran |
| | Johnston, Corazón A. |
| | Joshi, Pranil Satish |
| | Kalandarova, Kohl |
| | Karita, Uwizerwa Sonia |
| | Kern, Kelly Mackenzie |
| | Kohga, Maho |
| | Kwon, Andrea |
| | Lascar, Sasha Roland Abraham |
| | Li, Kaia |
| | Lim, Ian |
| | Liu, Angela J |
| | Liu, Janet |
| | Lopez, Fatima Guadalupe |
| | Maeda, Harumi |
| | Mathews, Quinn Jack |

| Email address @stanford.edu | Name of Enrolled Student |
|---|---|
| | Miller, Barrett Andrew |
| | Mossmer, Nicole Elise |
| | Murphy, Matt |
| | Namba, Ayumi |
| | Opferman, S G |
| | Palmer, Jasmin Elena |
| | Quiroz, Jessica Citlalli |
| | Ramos Escoto, Omar Enrique |
| | Redic, Darren Troy |
| | Rieken, Merissa Bryn |
| | Robinson, Kameron Jarod |
| | Schroeder, Olivia Cyan |
| | Seybold, Maddy Marguerite |
| | Singh, Riddhi Kapoor |
| | Somaratne, Griffin Daniel |
| | Sosa, Sophia |
| | Tena-Meza, Stephanie |
| | Thiengmany, Shaleen R |
| | Toyozaki, Dominique |
| | Tran, Ayumi |
| | Varuvel Dennison, Deepak |
| | Viruet Quintero, Olivia Felice |
| | Wang, Yu Han Daisy |
| | Williams, Samantha Magdalena |
| | Wong, Emily |
| | Zhang, Grace |
| | Zhao, Luke Yuchen |
| **Students on Wait List** | |
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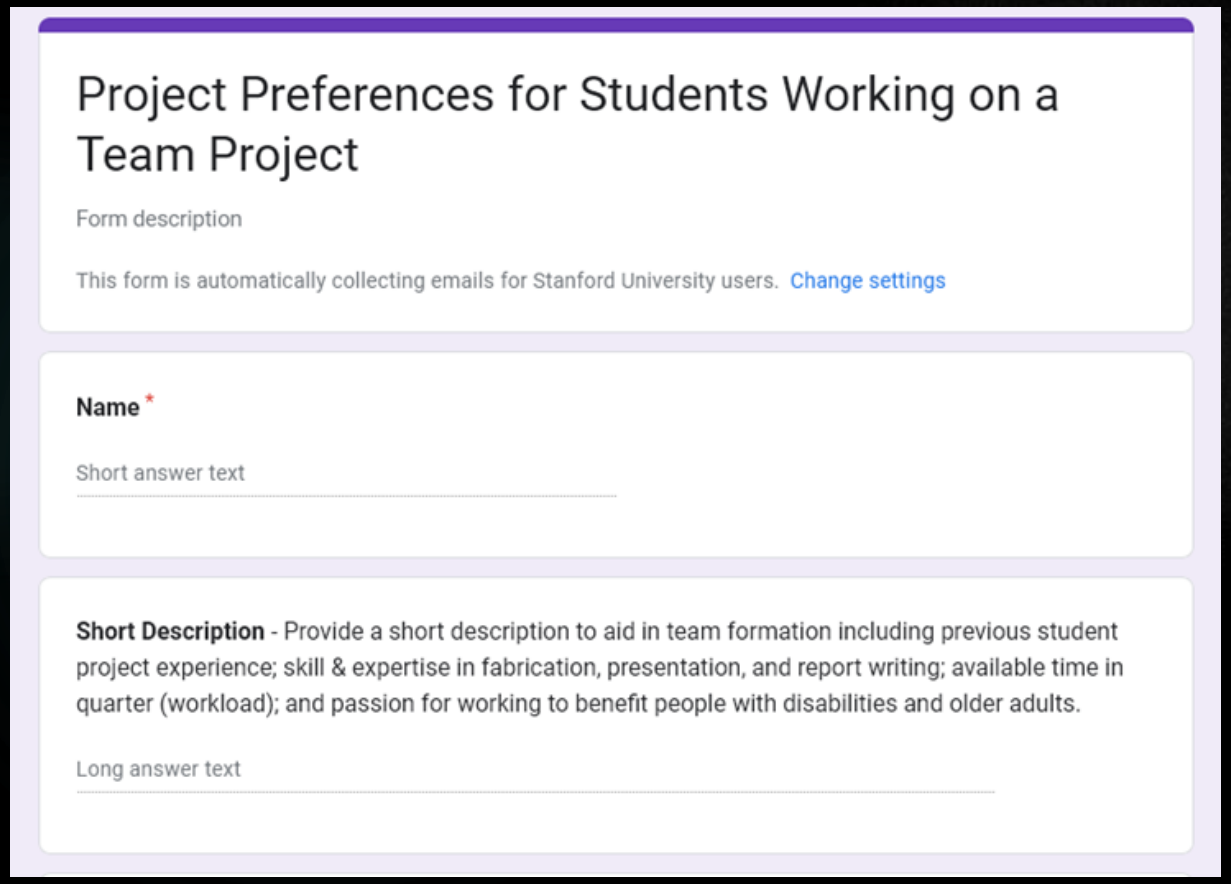
| | O'Malley, Seamus Patrick |
| | Sandoval, Breanna |
| | Alex, Sommer |

If your name doesn't appear on this page, enter it on the following sheet

# Online Project Preferences Google Form

http://engr110.stanford.edu/01b



Project Preferences for Students Working on a Team Project

Form description

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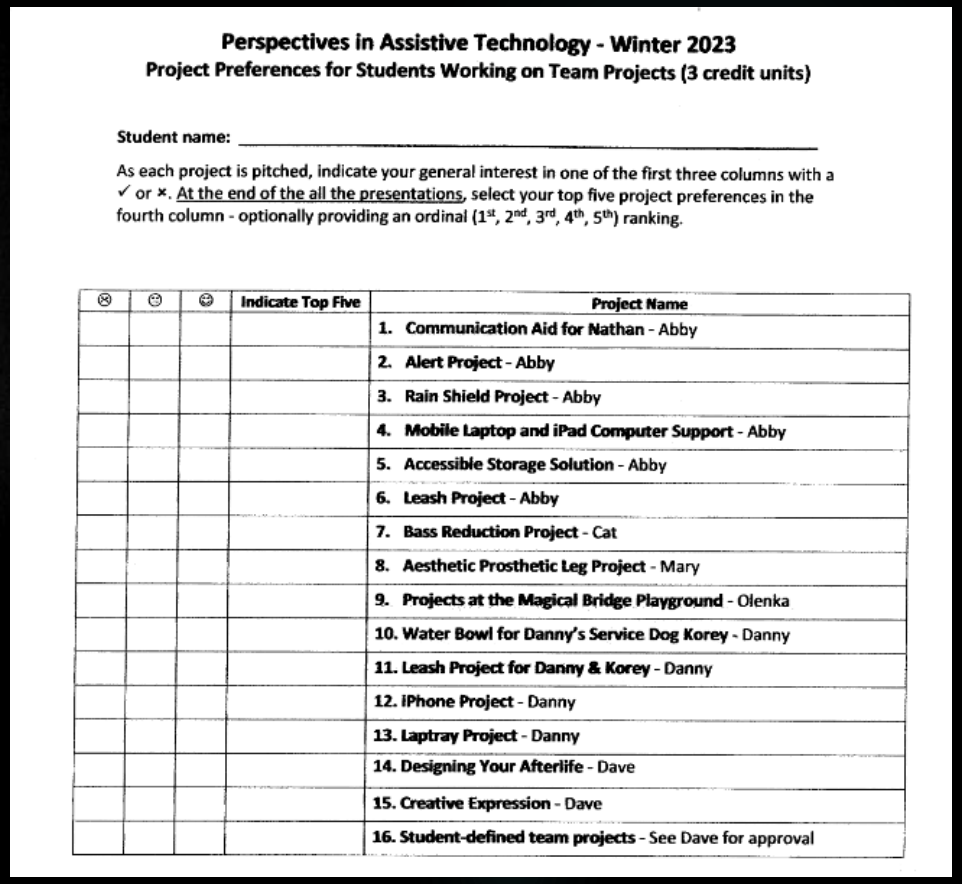
Name *

Short answer text

**Short Description** - Provide a short description to aid in team formation including previous student project experience; skill & expertise in fabrication, presentation, and report writing; available time in quarter (workload); and passion for working to benefit people with disabilities and older adults.

Long answer text



**Perspectives in Assistive Technology - Winter 2023**

**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. **Communication Aid for Nathan** - Abby |
| | | | | 2. **Alert Project** - Abby |
| | | | | 3. **Rain Shield Project** - Abby |
| | | | | 4. **Mobile Laptop and iPad Computer Support** - Abby |
| | | | | 5. **Accessible Storage Solution** - Abby |
| | | | | 6. **Leash Project** - Abby |
| | | | | 7. **Bass Reduction Project** - Cat |
| | | | | 8. **Aesthetic Prosthetic Leg Project** - Mary |
| | | | | 9. **Projects at the Magical Bridge Playground** - Olenka |
| | | | | 10. **Water Bowl for Danny's Service Dog Korey** - Danny |
| | | | | 11. **Leash Project for Danny & Korey** - Danny |
| | | | | 12. **iPhone Project** - Danny |
| | | | | 13. **Laptray Project** - Danny |
| | | | | 14. **Designing Your Afterlife** - Dave |
| | | | | 15. **Creative Expression** - Dave |
| | | | | 16. **Student-defined team projects** - See Dave for approval |

# Team Projects Pitched by Suggestor

- Projects with Abby:
  - Rain Shield Project
  - Laptop Storage
  - Laptray Artwork Easel
  - Treats for Nathan
  - TravelScoot Camping Basket
  - Cutting Board

- Projects with Olenka at the Magical Bridge Playground:
  - Accessible & Inclusive Playground Attractions

# Team Projects Pitched by Suggestor

- Projects with Gary:
  - Prosthetic Foot Shell Projects
- Project with Kent:
  - Transporter for Kent
- Projects with Danny, Kiara, Stanford, and Korey:
  - Poop Management for Danny's Service Dog Korey
  - Treats for Korey
  - Water Bottle Opener for Danny
  - Obstacle Detector

# Projects Suggested by Dave

- Creative Expression
- Designing Your Afterlife
- Student-defined Projects

On deck: Abby

# Projects with Abby

- "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."

- Challenges to address:
  - Rain Shield Project
  - Laptop Storage
  - Laptray Artwork Easel
  - Treats for Nathan
  - TravelScoot Camping Basket
  - Cutting Board

Abby & Nathan

Play video

On deck:  Olenka

# Rain Shield Project

- Explore designs for a suitable covering (a garment or wheelchair / scooter accessory) to protect Abby and her mobility device.

Play video

# Laptop Storage

- Explore alternative storage solutions for Abby's Mac laptop which don't rely on a backpack attached behind her wheelchair seat.

Play video

# Laptray Artwork Easel

- Explore designs for a wheelchair-mounted easel.

Play video

# Treats for Nathan

- Explore and fabricate solutions that would enable Abby to easily and safely reward Nathan.

Play video

# TravelScoot Camping Basket

- Explore designs and fabricate an improved device for transporting items.

Play video

# Cutting Board

- Explore designs and fabricate an improved cutting board.

# Magical Bridge Foundation

## Playgrounds & Programs Designed for All Ages and Abilities

Olenka Villarreal, CEO + Founder

MAGICAL BRIDGE FOUNDATION

On deck: Gary

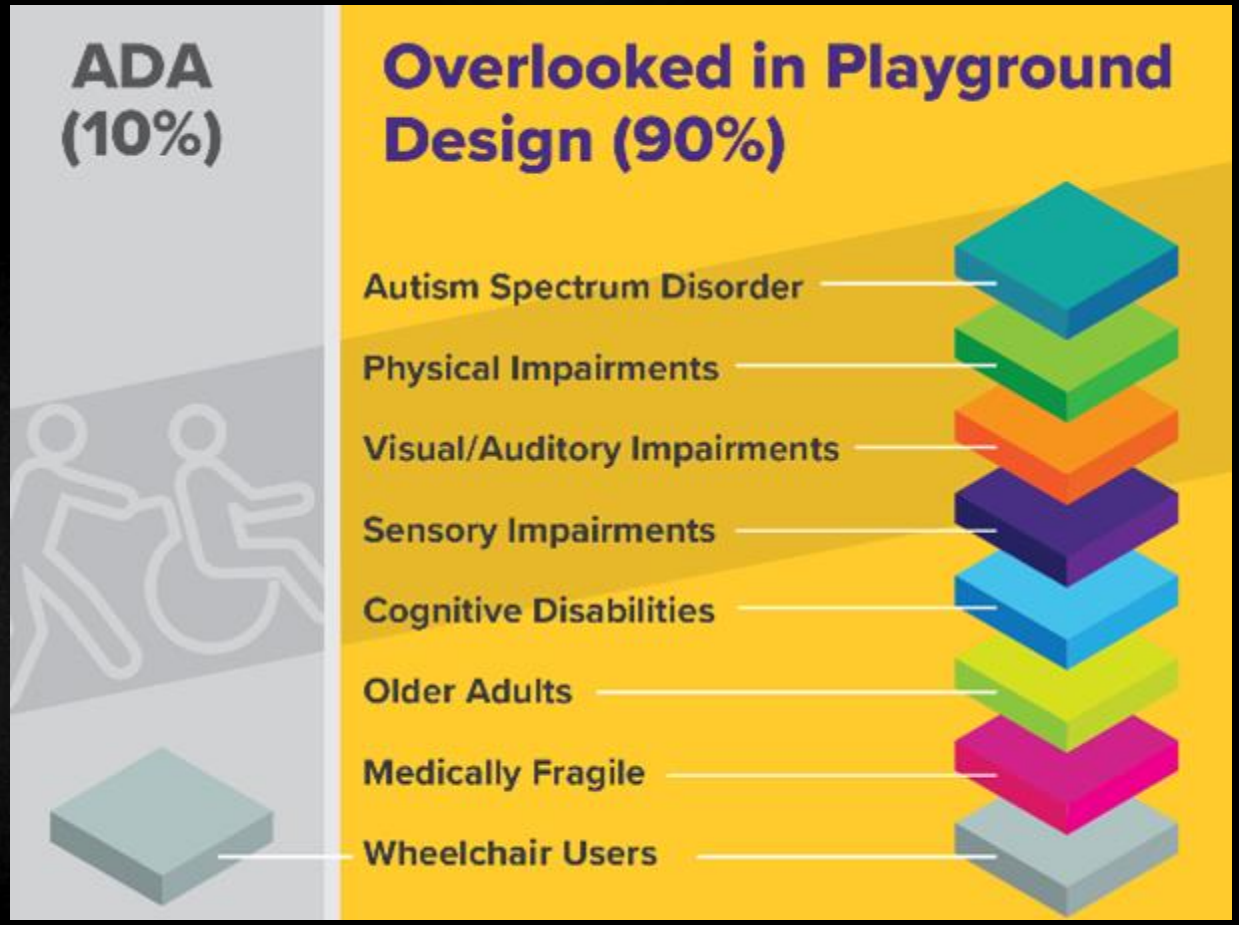
# 1 in 4 PEOPLE ARE LIVING WITH A DISABILITY

## 1 BILLION WORLDWIDE

**10% of disabilities look like this....**

**and 90% look like this.**

## THE DISCOVERY




MAGICAL BRIDGE FOUNDATION

# Typical Playground

## Inclusive? Accessible? No

## ADA Compliant? ***YES***

# Typical Playground

**Loose Surfaces**
Not Accessible; Unsafe for Breathing Impairments

**No Shade**

**"Rat Maze"**
No Options

**No Group Play**
Space Limited to Individual Play

**Defined Paths**
Little Play Value

**No Retreat Spaces**
No Escaping Frenetic Pace

**Raised Borders and Platforms**

**Disorder**
Dense and Overwhelming

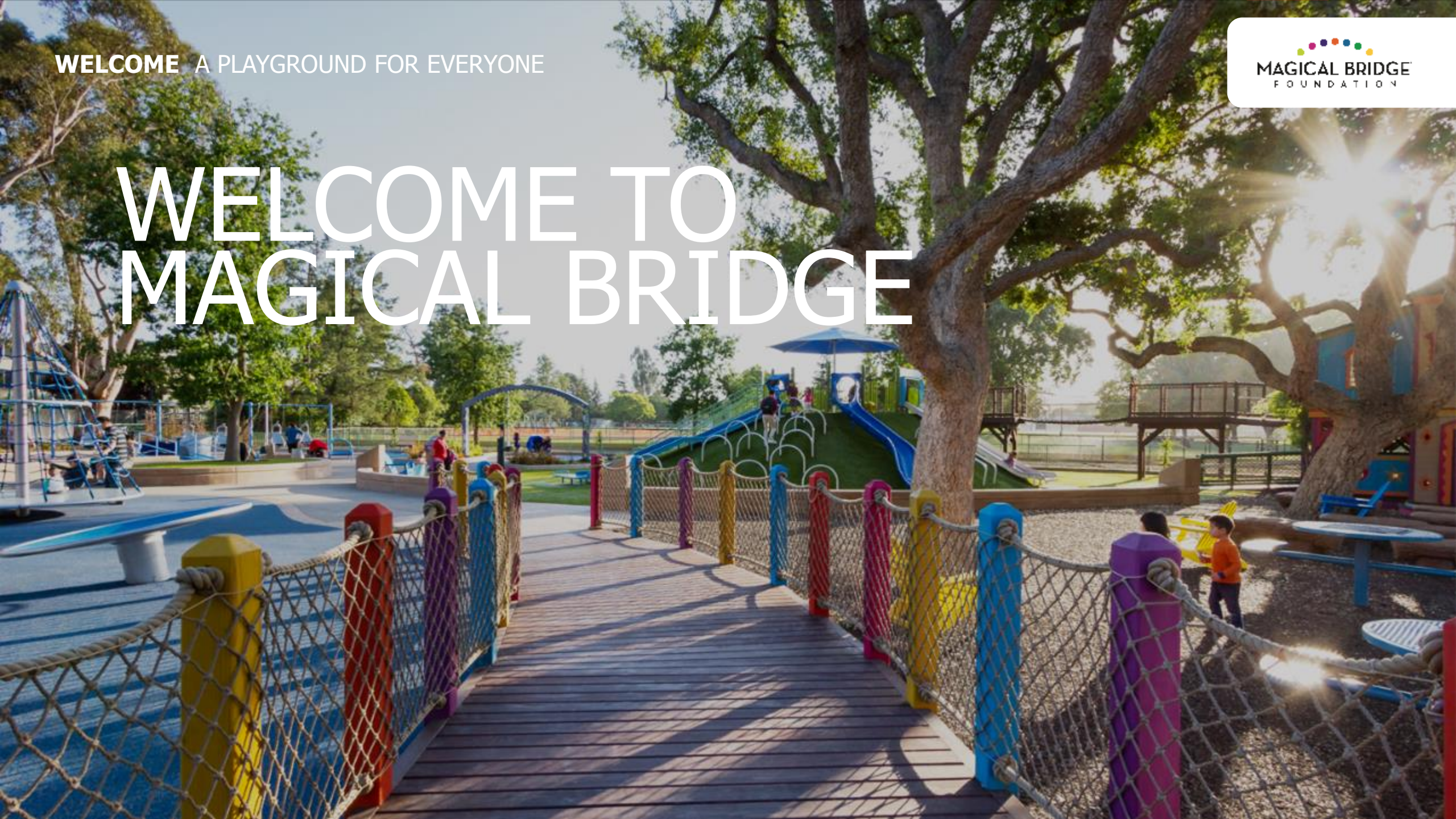
**Unimaginative Equipment**

**One Challenge Level**
Nothing for the Disabled

**No Gates**

MAGICAL BRIDGE FOUNDATION

# WELCOME TO MAGICAL BRIDGE



**MAGICAL BRIDGE** THE NATION'S MOST INCLUSIVE AND INNOVATIVE PLAYGROUND OPENED 2015

**PLAY ZONES™** PREDICTABLE, DISTINCT PLAY EXPERIENCES, CHALLENGES, MOVEMENT, AND CHOICE

MAGICAL BRIDGE FOUNDATION

Slide Mound


Community Playhouse and Stage

Spin Zone

Innovation Zone

Swing and Sway Zone

Tot Zone


Kindness Corner

Hideaway Huts

# 10 Magical Bridge Playgrounds

## Open Facilities:

- Bay Area Destination Playgrounds in Palo Alto, Redwood City, Sunnyvale, Morgan Hill, Santa Clara, Mountain View
- Bay Area School Playgrounds in Addison (Palo Alto,) El Carmelo (Palo Alto), CCRMS (East Palo Alto)
- Museum at Curiodyssey (San Mateo)

## Underway Projects:

- Daly City, San Raphael, VTA Center (San Jose), Healdsburg, Morgan Autism Center
- 2 Singapore Pathlight Schools (international)

Mitchell Park, Palo Alto, CA

Red Morton Park, Redwood City, CA

Fair Oaks Park, Sunnyvale, CA

Community Park, Morgan Hill, CA

**FOCUS ON** GROUNDBREAKING CONCEPTS AND ACCESSIBILITY

**TECH**

PLAY
24-String Laser Harp and Drum Pads

ACCESSIBILITY
"Slide 'N Sit" Bench for Slides

**PRODUCTS**

**SOLUTIONS**

INCLUSION
Space to Retreat from Active Play

# THE OPPORTUNITY - DESIGN FOR ALL AGES AND ABILITIES

ALL ABILITIES • ALL AGES • ALL WELCOME

**TECH**

NEW Interactive Experiences: Music, Touch, Games

**PRODUCTS**

NEW Sensory Experiences for People with Autism

**SOLUTIONS**

NEW Engaging Fitness Equipment for Older Adults


JOIN US magicalbridge.org
JOIN OUR MAGICAL MOVEMENT
MAGICAL BRIDGE FOUNDATION
kindness ambassador
Design for all, ALWAYS!
Thank you for your kind attention!

# Projects with Gary - Foot Shell Projects

## Meet Renee

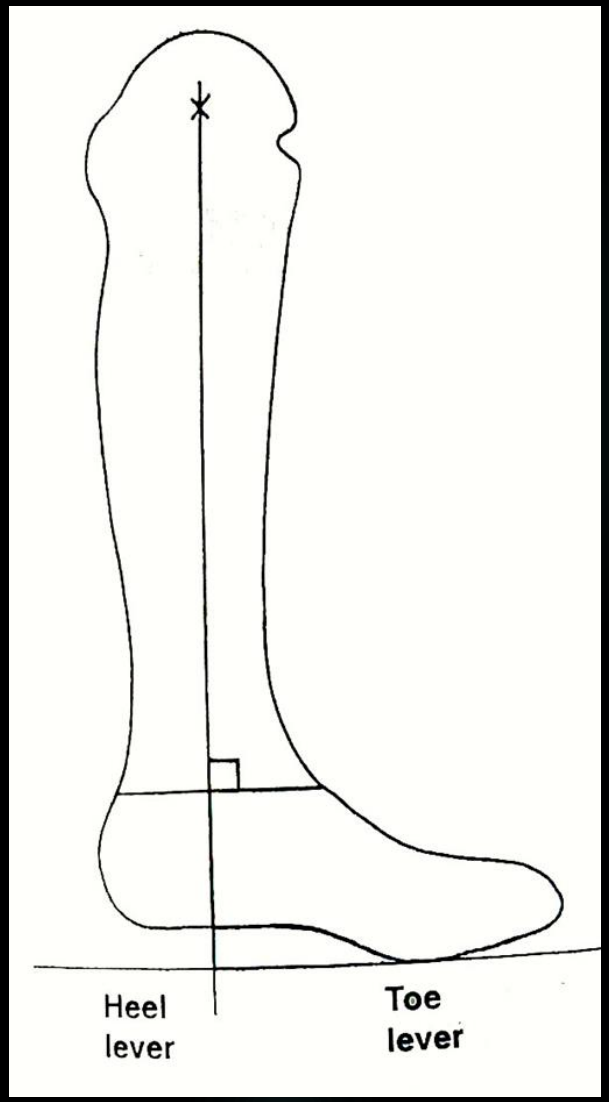
On deck:  Kent

# Footshell Project

- How is a prosthetic foot selected?
- What is the role of the footshell and the shoe?

# Footshell Project – The Problem

- People wear different shoes with different heel heights
- People like to go barefoot
- The sock inside a foot shell gets dirty, wet, and smelly.
- The footshell is difficult to remove and put back on.



# Footshell Project

- How do we remove a footshell now?

# User Removable Footshell

- Advantages
  - User can now clean or replace spectra sock from dirt, water, smell, etc.

  - User can be provided multiple shells with variable heel heights

# Project with Kent - Transporter for Kent

- Explore designs and fabricate prototypes that would allow Kent to confidently carry items without concern for dropping them.

Kent is a power wheelchair user and is active in the Stanford Chapter of the FSHD Society.

On deck:  Danny, Stanford, and Kiara

# Transporter for Kent

# I'm Kent - I could use your help!

**I have FSHD – a type of muscular dystrophy.**

*"FSHD is a 'takeaway' disease"*

- ***Upper and lower body muscles get weaker over time – no treatment available***
- ***The disease steals autonomy and independence***
- **My arms and legs are increasingly weak**
- **My wheelchair gives me back some autonomy, and allows me to carry things I could not while standing**


# My Chair

My chair is my **"Beast of Burden"**

It can help me carry heavy loads, as long as those objects don't interfere with the joystick or require use of 2 hands to support

I need something to support and contain misc. objects on my lap

It needs to be light and fold flat and slide into the storage area beneath the seat

Max dimensions:  18.5" x 14" x 6"

# Me in my chair


Chair Folds up

- Solution must be easily removable
- Cannot interfere with folding of chair


# The Problem

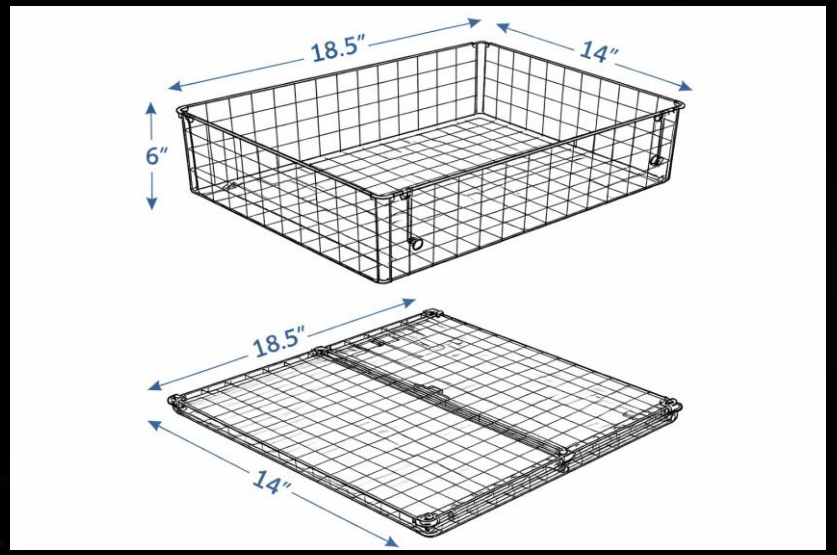
- Carrying items without dropping
- Need hands free for steering and opening doors

# Solutions?

## Lapstacker Flex

- Doesn't work on all chairs
- Loose / uneven objects can slip out

## My Idea




- Needs to be durable & sturdy – will stand up to frequent folding / unfolding
- Easy to fold / unfold with hands that don't work that well
- With a way to secure container bottom to my leg strap or armrests

# Projects with Danny, Kiara, Stanford & Korey

- Poop Management Project
- Treats for Korey
- Water Bottle Opener
- Obstacle Detector

Danny is a wheelchair user from Los Gatos with cerebral palsy. He experiences limited upper body strength, grip & vision impairments, and diminished hand & finger dexterity.

Play video

On deck: Dave

# Poop Management Project

- Explore designs for a poop management system for Danny's service dog Korey.

# Treats for Korey

- Explore solutions that would enable Danny to independently reward Korey.

# Water Bottle Opener for Danny

- Explore designs that would enable Daniel to independently open a water bottle.

# Obstacle Detector

- Explore designs to detect curbs, drop-offs, and obstacles and alert Danny.

Smile and the World Will Smile Back

# Dave's Suggested Projects

- Designing Your Afterlife
- Creative Expression
- Student-Defined Team Projects

# 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.


# 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.


# 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.

# Student-defined Team Projects

- Student-defined Projects - Dave

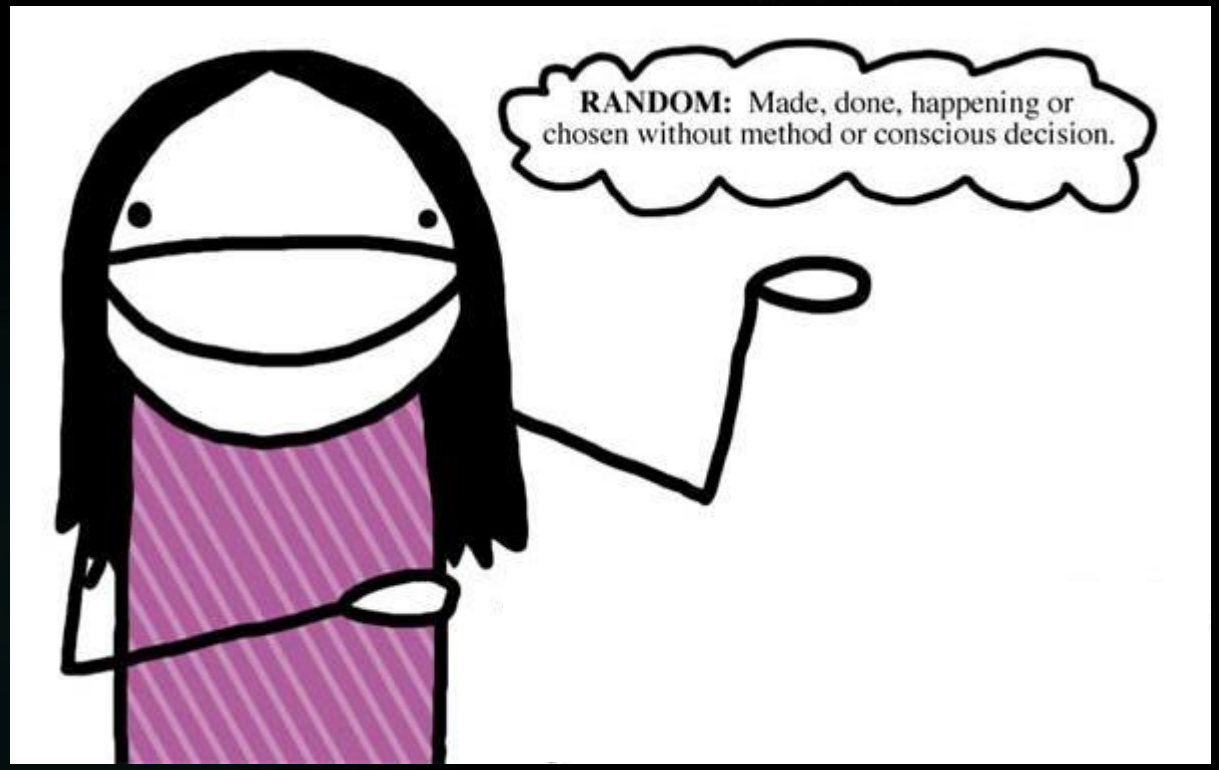
- Interview, observe, and discuss assistive technology problems with an individual with a disability or older adult. Address their desire to participate in one of the following activities by designing an adaptation to an existing device / tool or creating a new, more useful one:
  - Activities of daily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

# Open Question Time and Non-Random Access


Who is working on projects?

Get more info from project suggestor

Identify others interested in same projects




Talk with Project Suggestors to get more information on projects

What are your project preferences?

Rank your top choices

Submit or hand in your Project Preference Sheet!

Have course questions? Ask Dave

See Dave if you want to work on a project that he suggested