Announcements/Reminders

- Presentation slides
- IBM Workshop - **late February** (Stay tuned!)
- MakerSpace access - please email Professor Nguyen
- Laurel Riek, CSE Professor - Healthcare Robotics
- Bob Martin, Microchip - Technical Consultant
  - Tech Lead for each team - Please sign up tonight!
- **Next meeting:** Wednesday, February 22 (7-9 PM)
- **Next Meet & Greet:** Saturday, February 25 (1-3 PM)
Bob Martin, Senior Staff Engineer will be on campus for an all day session that will include:

- Specific one on one consulting sessions for design teams to review technical issues / concerns with their designs.
- General impromptu sessions covering battery technology, power supply designs and low power techniques. Sensor technology including interfacing, response time and basic applications can also be covered.
- Wireless technologies, the advantages / disadvantages of Wi-Fi, BT, BT low energy, ZigBee and others.
- Make vs. buy, where to get preassembled working modules that will speed up development of the project.
- Tutorials on the Atmel Studio 7 development environment and the eval boards available from Microchip to address the microcontroller aspect of the design.
Business Thesis: Your pharmacist in residence

Team: Ludicrous
Idea: Pilli
Our Team

George Lachow
4th Year, ECE

Dennis Ren
3rd Year, ECE

Breanna Leahey
4th Year, ECE

Alaina Bujtor
4th Year, ECE

Ian Schroeder
4th Year, CSE
Sociology Minor
Our Product

● A “smart” pill sorter/dispenser
  ○ Stores a month’s worth of 10 pills
  ○ Timely reminders
  ○ Dispenses the correct dosage
  ○ Knows when to refill prescriptions
● Simple, easy to use interface
● Can be linked to a smart phone or email address
Value Proposition

Senior-proof interface
No setup required
Organize pills in all form-factors
Never forget a dose
How are we determining the need?

What We’ve Done:

- Met 2x w/ seniors at the Vi La Jolla
- Senior meet & greet 1/14
- Professor Lugannani

Observations:

- Nearly all seniors need reminders to take pills on time
- Senior have dexterity problems
- Vi La Jolla nurses must walk around with large cart
- 550 million people global market size
Target Market

Possible Customer Segments:

- Senior who forget to take their medication due to a deteriorating mental state
- Senior professionals who are busy and simply forget to take their medication
- Assisted living homes, to replace some of the work for nurses (including record keeping)
Next Steps

- Confirm safety requirements
  - Product material research
  - Potential FDA approval
- Get feedback from more seniors
- Talk to nurses at assisted living homes
- Now: Initial system architecture design, customer research
  - W3-6: Initial mechanical prototype, sensor testing
  - W7: Schematics and PCB layout freeze, send out for PCB prototyping
Snapper Cane for unsteady hands
Interactions with Senior Citizens

Meet & Greet with UCSD Retirees

- *Key Insight*: Seniors who have an unsteady hand and depend on a cane for support should not use the cane to pick things up from the floor.

E-mails with Seniors from La Costa Glen Meet & Greet

- *Key Insight*: Seniors enjoy taking recreational classes to improve their balance.
Project Ideas
Precise, Portable Pick-Up Tool
Phone Application for Senior Mobility Exercises
Feedback from Seniors on Phone Application for Senior Mobility Exercises

“The application you described sounds helpful. I do constantly use reminders. I work with a personal trainer as often as both our schedules permit. Do not go to organized classes. I play bridge twice a week and take the two bridge classes offered each week.” - Sandy

“I would think that a phone app to keep track of the exercises would be beneficial. But I would expect the exercises would change depending on the particular injury. I recently was given the Apple Watch which does try to give me alerts to breathe and walk around. It's turning to be a bit of a bother however and I may turn that feature off. In conclusion, the app you're suggesting would be useful if it is specific to the regimen the user wants to execute.” - Vic
Impact

- A portable tool that can help senior citizens pick up small objects from the ground without forcing them to bend or lower to the ground.
- A phone application that provides senior citizens with an array of exercises to improve their balance.
Thank you!
Needfinding

- Met with seniors at Meet-and-Greet
- Caretakers of patients with Dementia/Alzheimer's seemed concerned about regular medication consumption
- Only ~50% of patients take medications as prescribed (Brown, Bussell)
Goal

Connect caretakers and loved ones with seniors to ensure medication adherence.
Scenario

1. Jon is alerted by dispenser to take a pill...
2. but Jon might still forget to take the pill.
3. His caretaker receives a notification on his phone.
4. Caretaker can follow up with Jon about his medication if needed.
Proposed Solution

- **Social Pill Dispenser**
  - Notifies loved ones and caretakers of seniors to ensure medication adherence
  - Keeps track of pill dosage scheduling
    - Alerts caretakers when seniors miss a dose
  - Improves communication between users
    - Through a web app
Components

- **Hardware**
  - Arduino, Bluetooth Module

- **Software**
  - Web Application

- **Physical UI**
  - Dispenser
Thank You! ❤

Future Plans:

- January, 2017
  - Software interface skeleton, including web/mobile apps.
  - Research hardware and APIs
- February, 2017
  - Prototype solutions function list
  - Design pill sensing hardware and its bluetooth capability.
  - Begin coding backend, build pillbox circuit
- March, 2017
  - Design database/backend software functionality.
  - Polish front end design to fit final prototype.
- April, 2017
  - Test adding the first round of users.
- May, 2017
  - Implement design changes based on user feedback.
  - Launch the app in a real world environment.
- June, 2017
  - Prototype Demo and Design Competition Showcase.

References:

Just before Easter I remarked to my husband that, with the children grown and away from home, this was the first year that we hadn’t dyed eggs and had an Easter-egg hunt.

“That’s all right, honey,” he said. “We can just hide each other’s vitamin pills.”
Team Members: Danny Lim, David Chang, Jarnin Fang, Justin Chou, Tarun Pasumarthi
Meet & Greet with La Costa Glenn Community
- Met several different seniors

UCSD Alzheimer’s Disease Research Center
- Weekly support group for Early-Stage Alzheimer’s patients

Brookdale Senior Living (Carmel Valley)
- Recreational activities with senior residents
- Interacting with seniors at memory care unit
Loneliness
Nostalgia
Regret
Project Idea

Web Application that allows seniors to record private and permanent video (and audio) messages for their friends and family
Project Idea

➢ One account linked to a family
➢ Profiles for each family member
➢ Can record and store video/audio recordings on profiles (automated interview questions)
➢ Can also view stored recordings on profiles
This product allows a senior citizen to easily leave a permanent legacy behind for their loved ones.
Thank You!
Team Little Einsteins

Tori, Ming, Woen, Adrienne, Jack, Yuka
Interview Summary

Insights gathered from Meet and Greet:

- Doesn't take the initiative to ask for help
  - Doesn't want to burden family members
- Treat senior citizens as fully cognisant
- Caretakers’ problems - overbearing workload, emotionally draining
- Family members start to neglect seniors

What we should consider when thinking about our solution:

- Familiar device
- Prefer speech recognition
Brainstorming

How might we help caretakers remember their daily activities/schedule without taking away the dignity of senior citizens?

Constraints of solution: subtle, familiar, treats them like an intelligent adult (keeps their dignity)

Some solutions:
1. Tracking device hidden in underwear → to make it subtle
2. Voice communication system → familiar to them
3. A device that tricks them into thinking they are doing something themselves but device is doing it for them → keeps dignity
Problem Statement & Users/Stakeholders

1. Need a device that helps seniors remember daily activities/schedule without taking away their dignity
2. Caretakers
   a. Need a way to make sure seniors are taking care of themselves without being a constant presence
3. Family members that use the app
   a. Can be in contact with seniors without too much trouble
   b. Won’t have to monitor too closely so that seniors can maintain independence
Solution: Software Component- Web Application

1. Select a time for the reminder that’s appropriate for when the event should have taken place by.

2. Record the caretaker’s spoken description of the reminder in the form of a question.

3. Save all the information about the reminder and send to device.

4. Record the senior citizen’s answer to this notification.
Solution: Hardware Component- Voice Communication Device

- Speaker that plays the scheduled recordings sent via wifi
- Speaker has voice recognition and able to record the reply (similar to Alexa)
  - Reply is sent back to family member and caretaker
    - Family member can then reply to senior’s response
    - Caretakers keep them accountable
      - Can provide help if needed based on the response
Impact

- Readily available and applicable functionality
- With companionship and environmental stimulation, seniors receive the necessary mental stimulation
- Can keep family members accountable, better relations with isolated seniors
- Helps to retain dignity of senior citizens & helps them complete daily activities
Thank You!
KiWi Team Members:
Geeta Asuri, Maya Azarova,
Gulmira Mustapaeva,
Kien Nguyen, Devon Stanfield

3rd Monthly Update Meeting | Wednesday, January 25, 2017
Design Competition 2016-2017
Objective:

To provide safer mobility for seniors who need assistance while walking with our Smart Walker
Problems Observed

- Challenges of keeping balance while walking
- Falling
- Overestimating the ability to walk long distance
- Difficulty to push a walker uphill and downhill
- Changes in elevation causes rapid balance change
Product Idea: Smart Walker

A multipurpose walker.

- Sense and warn about changes in elevation ahead: uneven pavement, poorly marked step, rug with edge folded over etc.
- Integrated source of light for poorly lit areas with on/off switch
- Foldable cane attachment to use for shorter distances
- Cup holder attachment for convenience
- Small attachment to help walkers get over curbs
Feedback from seniors:

- Adjustable to the height
- Favored swipe card safety lock addition to the basket
- Ergonomic palm grip handle bars
- Tools to open the doors ahead and grabber attachment
Impact

1. Higher sense of comfort and safety while walking
2. Independence
3. Better night vision
4. Higher mobility and convenience
Target Market

People who are 65 and older make up 14.5% of U.S. population. Most of them need assistance while walking and can use our product to solve their needs.
Thank you!
easyTech

Jan 25th, 2017
Team for Meat
Our Observation - Questions

- In order to understand older adults’ patterns and preference of communicating method
  - What communication method do they use?
  - What communication method do they prefer and why?
  - How do older adults perceive technology use for interpersonal communication?
  - What barriers exist for older adults to use communication technology to communicate with family and friends?
Our Observation - Answer

- They have the interest to learn more
- They need help to learn
- Some seniors only use basic functions
- 46% use social networking sites such as Facebook, well below the national average of 73% of adult internet users.
Our Motivation

● For offline seniors: help them to use basic iphone and ipad

● For internet senior users: help them to use social networking sites, including Facebook, Twitter and Instagram
Current Alternatives

- Google
- Books
- Asking others
Our Goal

Design a mobile application that works as a tutorial for seniors to use technology products.

Our mobile application should be highly intuitive that can be easily understood and utilized even by people with hearing or visual defect.
Key Features

- Both vocal and image based, so it works with people who do not have good vision or hearing.
- Simple and clear layout
- Step by step and easy to check back
Thank you
Team Shuffle
ECE Design Competition
January 25, 2017

Alexander Khoury - Electrical Engineering
Craig Ives - Electrical Engineering
Timothy Han - Electrical Engineering
Vincent Tang - Electrical Engineering
Tyler Richard - Electrical Engineering
Eric Waters - Electrical Engineering
Carmel Fiscko - Electrical Engineering
Connor Devaney - Cognitive Science
Problem: Falling

- Primary cause of seniors being admitted to hospitals, loss of independence, injury deaths
- Annually, 1.6 million seniors require emergency services due to falling related injuries

Project Objectives

- **Detect** movement that precedes a fall
- **Recognize** the movements that may cause a fall
- **Notify** a person who is in danger of falling
Hardware Solution

- Pressure sensing

- Ground Surface characteristics

- Gyroscopic location data

- Inductive charging
Software Solution
Feedback

- May be more helpful to sense the environment rather than the gait.
- Senior Feedback: Seems helpful, but you need a robust notification system
  - Notification system needs to be stylish or not noticeable.

Response

- Maximize probability of senior usage.
- Environmental detection is bulky and costly.
  - Want low-profile, budget friendly solution
- Plan to implement multiple options for notifications
  - Plan to poll seniors about preferred methods
TEAM WELL PLAYED (WP)

Hello, Light!
Hey, light 1.0!
Interactions with Senior Citizens

1. After we received feedback from seniors:
   a. We changed our original idea
   b. Focus more on observing and understanding seniors’ daily life
   c. Special thanks goes to Susan.
Problem Observed

Seniors have difficulties on remoting their resident light system due to sight’s degeneration:

1. Falling down
2. Feeling insecure
3. Different sleeping time between couples
Project Idea

To design a **personalized and automated lighting system** at home:

* Manual Remote + voice control:
  * Customized intensity control: sleep, rest, reading, *etc*
  * Customized RGB color control: choose your favorite color!
Impact

- We want to create a device that benefit seniors’ daily life.

- With this device, we expect our seniors can:
  
  a. Have more enjoyment when they are reading
  
  b. Increase convenience and comfortness at home
  
  c. Especially if couples’ schedule are different
Thank you
Walking Stick – Magicians

Team Members: Junru Ren, Jiali Xie, Xingshen Zhang, Qixin Ding, Ruijia Cheng, Xiangyu Zhao, Jiani Huang, Shuangli Zhou, Yifei Zhang

Monthly Update Meeting | Wednesday, January 25th
Design Competition 2016-2017
Problems Observed

1. Depth perception
2. Mobility
3. Vision
4. Direction
5. Uncomfortable body posture when using walker
Interactions with Senior Citizens

Meet & Greet with UCSD Retirees
- Met three different seniors

Meet & Greet with La Costa Glen Community
- Met eight different seniors

Separate interview times have been set up with each of these seniors.
Project Idea

Portable walking stick with Depth Sensing Aid via lighting
Impact

- Provide seniors with security support of walking on stairs
- Help seniors mitigate self consciousness of using assistance in the public
- Easier to carry
- Assist senior with depth perception
Thank you!
SpeechView

~ Speech You Can See ~

Bryce Smith, CEO
Benjamin Lee, CMO
Devon Murphy, CTO
What Did You Say?

- Currently 54 million American adults (18+)*

- About 300 children are born with hearing loss everyday in the US.*

*US Department of Health and Services
Our Own Group

Science & Technology For Deaf & Hard of Hearing

Averaging 3-4 new members daily
Recurring Complaints

When Your Hearing Loss Leads To Embarrassment

THE BLOG When Your Hearing Loss Leads To Embarrassment

ET Shari Eberts Hearing health advocate, writer, avid Bikram yoga fan and mother who have a hearing loss. No big deal, right? But sometimes it is. Well, that is what happened to me.

HUFFINGTONPOST.COM

Like Comment

November 17 at 7:51pm

I have seen different apps for iPad and iPhone when it comes to close captions I would love to have something better to be able to understand what's being said in real time in conversations in groups or lectures or in settings like a restaurant Ava comes close to what I would love to have but not much out there for free any suggestions??

Yesterday at 1:20pm

I went into get my fitting done last night and I feel completely overwhelmed. He put the hearing aids in and it just reminded me of having a speaker in my ear (I know, I know, that's what it is) it just seemed completely weird. It sounded like everyone was shouting at me and I was in complete overload. I left feeling like maybe these things aren't for me. Has anyone else had this feeling? I don't know what to do now.

I depend on Close Captions. I even wish that they were on webinars and short videos.

I have implant but I don't like the sound and I'm not happy with it one more time I'm getting more headache it's getting worst I'm planning take it out

Like · Reply · November 23 at 8:28pm
Now I Can See Your Speech

- Subtitles/closed-captioning for everyday life
- Complementary to hearing aids
- Uses smartphone’s “voice-to-text”
- Frustrating social interactions are alleviated
Less is more with SpeechView!

- Minimalist design
- 2”x .5” OLED display
- 8-12 hour battery life
- $100-$150 price point
- Comes with a free App
- Ready out of the box
## SpeechView vs Competition

<table>
<thead>
<tr>
<th></th>
<th>SpeechView</th>
<th>ISeeWhatYouSay</th>
<th>Lumus</th>
<th>AirScouter</th>
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<tbody>
<tr>
<td><strong>Clear Visual Display?</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td><strong>For Deaf and Hard of Hearing?</strong></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
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<td><strong>Low Cost? (&lt;$100)</strong></td>
<td>X</td>
<td>X</td>
<td>(not including screen)</td>
<td></td>
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<tr>
<td><strong>Fits User’s choice of glasses?</strong></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Cordless?</strong></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Active speech to text?</strong></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Go-to Market Plan

- Social Media/Viral video
- Crowdfunding
- Printed Advertisements
- User referral
- Website
Thank you!

Any Questions?

Contact:
Bds001@ucsd.edu
7.benlee@gmail.com

Check Out:
https://www.facebook.com/groups/ScienceandTechnologyForTheDeafAndHardOfHearing/
3.36 million sales (~$5 billion) in 2016. With an average growth of nearly 5% every year since 1979.
<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<tbody>
<tr>
<td><strong>Revenue</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td># Units</td>
<td>15,000</td>
<td>50,000</td>
<td>100,000</td>
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<tr>
<td>ASP, $</td>
<td>$100.00</td>
<td>$100.00</td>
<td>$100.00</td>
</tr>
<tr>
<td>Direct Sales</td>
<td>$1,500,000.00</td>
<td>$5,000,000.00</td>
<td>$10,000,000.00</td>
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<tr>
<td><strong>Total Revenue:</strong></td>
<td>$1,500,000.00</td>
<td>$5,000,000.00</td>
<td>$10,000,000.00</td>
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<tr>
<td><strong>Expenses</strong></td>
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<tr>
<td># Employees</td>
<td>15</td>
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<tr>
<td>Labor Cost</td>
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<td>$960,000.00</td>
<td>$1,200,000.00</td>
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<td>Marketing Cost</td>
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<td>$170,000.00</td>
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<tr>
<td>Manufacturing Cost</td>
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<td>$4,000,000.00</td>
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<td><strong>Total Cost</strong></td>
<td>$1,430,000.00</td>
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<td><strong>Gross Profit</strong></td>
<td>$70,000.00</td>
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<td>Operating Expenses</td>
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<tr>
<td>R&amp;D</td>
<td>$55,000.00</td>
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<td>SG&amp;A</td>
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<td><strong>Operating Income or Loss</strong></td>
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<td><strong>EBIT</strong></td>
<td>-$89,000.00</td>
<td>$1,630,000.00</td>
<td>$4,255,000.00</td>
</tr>
</tbody>
</table>
Hey i just wanted to thank everyone for joining this group! Still trying to foster discussion and growth here, so if you have any questions you would like to ask or friends you would like to invite please dont hesitate! I feel like I've learned so much already, looking forward to more 😊

And thank you for all that you are doing, I check here often!

I agree with you. I learned a lot from this FB site

Me included!
## Business Model

**The Business Model Canvas**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
<th>Value Propositions</th>
<th>Unfair Advantage</th>
<th>Customer Segments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can't hear</td>
<td>Subtitles</td>
<td>Subtitles for the Hearing Impaired</td>
<td>Unique device</td>
<td>Elderly</td>
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<tr>
<td>Have to ask people to repeat themselves</td>
<td>Creates a reference</td>
<td>Enrichment of communication</td>
<td>First to address problem in this way</td>
<td>Hearing Impaired</td>
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<tr>
<td></td>
<td>No longer have to hear</td>
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<td></td>
<td>Non-native English Speakers</td>
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<tr>
<td>Frustrating to talk to people</td>
<td></td>
<td></td>
<td></td>
<td>Students</td>
</tr>
</tbody>
</table>

**Key Metrics**
- Printed Ads
- Free Trial
- Free Software
- Hardware
- Discount Voucher

**Channels**
- Friends
- Social Media
- Magazine
- Word of Mouth

**Cost Structure**
- Manufacturing: $60k
- Marketing: $20k
- Employee Cost: $128k/year

**Revenue Streams**
- Direct Sales
- Promotional offer

Benjamin Lee A11480186  Muse Artan A11151375
Bryce Smith A11724731   WEIAN HE A99405994
Create Business Model Canvas
- Identify required skills
- Identify resources
- Assign roles to resources
- BMC Formed

Envisioning
- Define preliminary business requirements
- Risk Management
- Determine Financial Plan
- Finished financial plan for first year

Research
- Preliminary user interviews
- Define usage scenarios
- Develop user profile
- Develop vision statement
- Establish design goals
- Develop Prototype

Implementation
- Test Prototype
- Public response
- Refine
- QA
- Seed Round Launch
Sources

Pictures:

http://www.wikihow.com/Deal-with-a-Cranky-Senior-Citizen

http://activeaidsolutions.com/about-us/benefits

Reference:

Team Boba

Jimmy Quach, Weley Lin, Wilson Tran, Anne Le, Paul Ngo

3rd Monthly Update Meeting | Wednesday, Jan 25th

Design Competition 2017
Problems to Solve

- Independence
  - Lack of physical activity
  - Safety
Our Solution

● Safety Applications
  ○ GPS Tracking
  ○ Emergency Call Button

● Ergonomic Design
  ○ Height-adjustability
  ○ Headlights
  ○ Improved braking system
Current

- Need finding
- Competitive analysis
- Initial planning
Future Plans

- Design schematic
- Buying parts
- Developing app or website
- First iteration
“If you can’t do it, ADAPT IT”

Thanks for watching!
S.C.A.R.A. (Senior Citizen Attachable Rolling Assistant)

Ammar Babikir - Hardware
Joshua Hernandez - Hardware
Vicky Guan - Software
Naveen Kashyap - Software
Michael Tran - Health Research / Software
Brian Wuerstle - Hardware
Blake Morris - Finance and Marketing
Observations

- Many Senior Citizens aren’t as nimble or agile as they used to be
- Tasks involving heavy objects are often avoided
Many senior citizens today are not strong enough to push heavy trash cans to the side of the street for the sanitation workers to dispose of the trash.
Our Solution To This Problem

A motorized wheel attachment that attaches onto the bottom of a city issued garbage can.
Design Challenges

- Durability
- Power consumption
- Ease of Installment
- Theft
Summary

- Many Senior Citizens avoid / cannot take out their city issued trash cans to the street curb for disposal.
- A motorized attachable to city issued garbage can help Senior Citizen’s autonomy.
DETERMINING THE NEED

One-on-One Interviews
Focus Group Discussions

FALL 2016
- Met 8 seniors (total time: 2 hours) at La Costa Glen.
- Met 5 seniors (total time: 1.5 hours) at the UCSD retiree meet and greet.

WINTER BREAK
- One team member visited a seniors retreat in India where she interacted with 18 seniors in a group setting for 3 hours.

WINTER 2017
- Follow up with 3 seniors (total time of ~3.5 hours) from LCG
- 2 seniors from the UCSD retiree meet and greet (total time: 3 hours).
- Focus group interview set up with seniors at The Patrician
NEEDS WE PROPOSE TO SOLVE

“Forgot to take medicine”
“Can you make the hearing aids louder?”
“I can’t distinguish between different conversations”
“I can’t distinguish words”
“I could hear the clinking of the glasses but not the person sitting right across from me”

“Invisibility”

REMEMBER TO TAKE THEIR MEDICINES

MAKE THE AMPLIFICATION IN THEIR HEARING AIDS LOUDER

MINIMIZE BACKGROUND NOISE.

SHARPEN WORDS

AMPLIFY CERTAIN CONVERSATIONS ONLY
HOW MANY PEOPLE SHARE THESE NEEDS?

Dad, I'm thinking of moving back home.

Pardon me?

Dear God... please tell me it's just a faulty hearing aid...

I'm not going to tell you again! Take your pills!
CURRENT ALTERNATIVES

- Starkey
- ReSound
- Samsung
- Siemens
- Widex
- William Demant/Holding
- Sonovia
POSSIBLE SOLUTIONS

App to filter and amplify sound. Links to your hearing aid.
POSSIBLE SOLUTIONS

Listening Device that targets some of the needs
POSSIBLE SOLUTIONS

Reminder system that can be attached to your pill box
DEVELOPMENT PLAN

JANUARY
FINALIZING NEED AND RESEARCHING SUBJECT

FEBRUARY
PROTOTYPING AND REDESIGN

MARCH APRIL MAY
REDESIGN, DESIGN SKELETON, PRODUCT DESIGN, IMPLEMENTATION, USER TESTING, A/B TESTING
THANK YOU!
Project Purple
Goal
To create a platform to support those taking care of Alzheimer’s’s patient.
Previous Idea

Focus:
1. Tracking/wandering/identification
   ○ GPS tracking watch
2. Memory Loss
   ○ Help remind activities like taking medicine

Idea:
A wearable watch that could help identify and track patients while also setting reminders for important activities.
What we learned:

- Dementia is a symptom, not a disease
- Every person is unique and has different needs and coping mechanisms
- Wandering is a big issue
- Caregivers need a lot of support, which many of them do not receive
- It is important to remember that Alzheimer’s patients are still adults and need to be treated as such
Conversation with an Alzheimer’s Expert

- Reasons for admission into care homes
  - Patient and caregiver safety

- Solution for prolonging in home care
  - Support systems
Our Change of Direction

All patients experience the disease differently but one common point is the caretaker.

Problem 1

Broadcasting Alzheimer’s disease can be demoralizing and a danger to their well being.

Problem 2

New focus
Caretakers
Patient Profile
- Medical history
- Tendencies
- Favorite food
- Favorite activities
- Daily status updates

Resource
- Facilities
- Products
- Ratings

Caregiver Community
- Forum for Q&A
- Connect with other caregivers
- Tips and advice
Current Alternatives

Alzheimer's Disease Pocketcard

Alzheimer's Society's Talking Point Forum

Luminosity
Next Steps

Surveying and research

Concept selection

User testing

Now

Feasibility tests

Finalize our direction

Iterate on the design

Reiterate

March
Senior Solutions

Team Members: Jason Barr, Eric Richards, Mingqi Shen, Jan Eric De Castro, Lily Tang, Tony Fung, Andres Baez

3nd Monthly Update Meeting | Wednesday, January 25 Design Competition 2016-2017
Interactions with Senior Citizens

Meet & Greet with UCSD Retirees

- Met four different seniors for 1.5 hours

Meet & Greet with La Costa Glen Community

- Met six different seniors for 1.5 hours

Interviews at American Canyon Care Home

- Met with 3 different seniors for 2 hours

Interviewed and observed older relatives during the holidays
Problem

How can we help seniors stand up from a sitting position?

- At La Costa Glen, took 15-30 seconds for a group of seniors to stand up while gripping a table in front of them for support
- Observed grandparents experiencing difficulty standing up out of chairs
- Senior at a care home said she would like to exercise everyday but is unable because her busy caretaker isn’t always available to help her stand up
LiftAssist

A cushion that helps seniors stand up from a sitting position that is both portable and comfortable.
Existing Solutions

Foam seat cushions

- Don’t provide much support
- Some seniors find uncomfortable/too bulky

Existing Seat Lifts (UpEasy, Carex Power Lift Seat)

- Bulky, not portable
- Intimidating and hard to calibrate
- Expensive ($100-$200)
Future plans

Interview seniors to answer the following questions

- Why aren’t existing solutions more prevalent?
- Do they have one or more places they primarily sit?
- How important is portability?
- How much lift is needed?
- Would they actually use a product like this?
- Would care homes be willing to use these in their facility?

Develop a design based on their desires and needs
Impact

- Reduce strain on knees and hips when standing up out of chairs
- Allow seniors to stand up without assistance
- Empower seniors to walk around more often, independently
Thank you!
Proposal

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Addressing the problem

- Memory Loss
- Amnesia
- Amnestic Mild Cognitive Impairment
- Alzheimers
Product: Smart Calendar

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
<th>General</th>
</tr>
</thead>
</table>
| • Create buttons pad to interface via USB  
  • determine how many buttons we need to use  
  • Make case to house screen/electronics  
  • [idea] IR proximity sensor to auto turn on display | • web server for custom UI  
  • interface with Google Calendar API | • Decide on layout for the 7” display  
  o monthly/weekly/daily options  
  • add option for family to send in pictures for them to receive |
Demand for product

- Listening and speaking with senior citizens, showed us demand for this product is real
  - Talked to acquaintances who are senior citizens
  - Talked to the seniors from the “Meet and Greet” event
    - La Costa Glen Retirement Community
    - UCSD Henry Booker Room
Current Alternatives

● Changing the display to an app
  ○ to accommodate iphone users, create an app rather than creating a new display for the “Smart Calendar”
  ○ However most seniors
    ■ Do not own a smartphone
    ■ Have difficulty using smart phone
    ■ Are unwilling to use new technology
Number of people sharing this need

- The problem that the Smart Calendar addresses, memory problem, was shared by almost all the seniors we talked to.
- The price estimate for the product is affordable
- The product will be easy to use for seniors
Schedule

Deadlines: End of winter quarter:
● Planning
  ○ Product planning
    ■ System Requirements
    ■ System Design (Block Diagram)
  ■ System Specifications
  ■ Autocad Inventor Design prototype
  ■ Divide work up between team members
    ○ Create Budget ($500)
    ○ Order parts
  ○ Create Budget ($500)
  ○ Order parts

Deadline: End of spring quarter
● Put together first prototype
  ○ Identify errors
● Put together final prototype
● Product Marketing
  ○ Website
  ○ Ad