# Design For All

150th Issue

"Design With Us, Not For Us:"
Co-Designing & Collaborative Community Outreach

Guest Editor:
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School of Design
San Francisco State University
Designed By Kelly Sekins
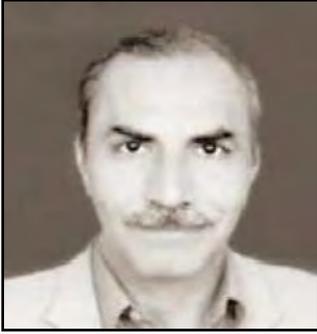
Letter from the Chairman's Desk

By Sunil Bhatia PhD

We are celebrating the very special occasion of monthly publication of ' Design For All' 150th issue in the month of June 2018 Vol-13 No-6 and the remarkable part is that not even single issue was ever missed since 2006.

This was possible because of commitment of our contributors to this noble cause who stood by honoring their words. Prof Ricardo Gomes of San Francisco State University is the Guest Editor of this milestone special issue and he kept his word inspite of health challenge of undergoing major surgery and convalescing in bed, my standing ovation and salute to his spirit. We have witnessed such commitment in many occasions from our contributors and I take this opportunity to express my gratitude.

Our journey from nowhere for achieving many milestones is like an unbelievable dream come true. Initial days were full of struggle typical of any new venture and experiences were bitter/sweet. We experienced where one side unconditional support, love and affection from our contributors and on other side we had outnumbered critics. Their feedback we value but often skepticism and negativity was quite an energy draining experience.

While I may not know exact reason what attracted our contributors to join this cause but a common binding force has been our sincerity, caring ,passion and working for inclusive growth. They whole heartedly supported our noble cause of free publications for disseminating information. I believe those who have supported and continue to do so in formative days have gone through similar experience and taken our appeal of contribution of articles with sincerity sensitivity. There is couplet "I started my journey for my goal all alone, people came and joined, it turned into caravan." It is no more our journey but it is collective responsibility to work for betterment of society. I should be thankful to those who helped us and same. It is divine help that allowed likeminded people to come at the common platform for establishing such publication.

It is not success of an individual but it is successes of all who wish such experiment to be successful. Three cheers for everyone Hip! Hip!! Hurray!!!

I hope as you contributed in past the same will continue in future. Our existence is because of your contributions and I appeal to each one of us to do our best and make this Design for all a significant tool for inclusive growth.

Once again our heartiest congratulations to contributors, readers and special thanks to Guest Editor Prof Ricardo Gomes for making this milestone a strong landmark.

Milestone of 150th special issue has acquired a new dimension by LAMBERT Academic Publishing for celebrating by bringing out book "Design For All, Drivers of Design" author Dr. Sunil Bhatia of Design For All Institute of India and it is available on www.morebooks.de one of the largest online bookstores. Here's the link to it:

https://www.morebooks.de/store/gb/book/design-for-all/isbn/978-613-9-83306-1

This book is dedicated to our esteem readers, contributors and well wishers.

With Regards

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Editorial Forward

Design With Us, Not For Us:

Co-Designing & Collaborative Community Outreach

Ricardo Gomes, IDSA

Professor, School of Design, San Francisco State University

MFA in Industrial Design and MA in Architecture from the University of California, Los Angeles and a BFA in Industrial Design from Massachusetts College of Art. Prof. Gomes has been a faculty member in the School of Design at San Francisco State University for over 27 years, where he coordinates the Design Center for Global Needs and the Shapira Design Archive Project. Prof. Gomes' area of expertise and research relates to Inclusive/ Universal Design; Design for Social Responsibility; Sustainability and Design Thinking Methodologies. He has conducted design keynote speeches, presentations, symposiums and workshops at universities and international conferences throughout Africa, Asia, Europe, Latin America and the U.S.

Overview

It is my honor and pleasure to be the Guest Editor of for the 150th Commemorative Issue of the **Design for All** (DFA) **Institute of India**, "Design With Us, Not For Us: Co-Designing & Collaborative Community Outreach." This is the third time that I have been offered the welcoming, and challenging, editorial opportunity to be a part of this inclusive online publication. It is a noble commitment to try and contribute to the admirable scholastic works and professional achievements that my colleagues before me have generated in the 150 issues that we share today. The Design for All Institute of India is a wonderful informational open-resource to share diverse perspectives relative to the inclusive, universal and holistic design practices, and principles that constitute our domain.

Co-Designing, and Collaborative Inclusive Design Outreach, are the driving principles and framework of the design stories, methodologies and values in the School of Design at San Francisco State University. This belated June 2018 commemorative publication highlights and features some if these exemplary works. The constructive and tangible user experiences that our projects herald, address the co-operative community partnerships, shared knowledge and social-environmental change that we seek to place at the forefront in the School of Design. These are the CORE values for promoting Design for Living, Well-being and Social Innovation in the context of sustainable Service Design.

Dr. June Fisher, 85, a physician focused on occupational health and CEO, or "Chief Elder Officer" for Aging 2.0, mentors design students at San Francisco State University and University of California, Berkeley. In addition she consults with startups on design and mobility in the San Francisco Bay Area. Dr. Fisher is one of the leading proponents of Co-designing, an approach to design attempting to actively involve all stakeholders in the design process to help ensure the result meets their usable needs.

Dr. Fisher's inclusive co-designing mantra, *"design with us, not for us,"* has become the collaborative charge and driver for students in my undergraduate product design studio and graduate design seminars. Dr. Fisher advocates for the establishment, *"a multi- generational design class with a cadre of elders who have the ability to set the agenda and participate in the development of products."*

For the past four years, Dr. Fisher has mentored teams in the advanced product design studio courses and graduate design seminars that I have led at San Francisco State University. In 2016, our City Cart team, led by Brandon Lopez and Eric Renard, won first prize in The Stanford Center on Longevity International Design Challenge, a global competition that encourages students to develop products and services to improve well- being across the lifespan.

This special publication *"Design with Us, Not for Us…"* issue serves as a retrospective tribute to the Five (5) Years of **Hearth Homes Inclusive Design Scholarship Awards** contribution to Design Innovation & Academic Excellence in our program. This 150th Issue also highlights and features some of the Inclusive Design Student Projects in the School of Design @SFSU that have led to the selection of SIX (6) **Stanford Center on Longevity Design Challenge Finalist** in the Five (5) Years of this prestigious international academic competition.

- **2014 SDC Finalist: Thermo Ring**, Kayvan Mojtahedzadeh
  https://lca.sfsu.edu/lcanews/2014/02/28/5473-graduate-students-ani-abgaryan-kayvan-mojtahedzadeh-gain-national-acclaim

- **2014 SDC Finalist: CONFAGE: AN EDUCATIONAL EXPERIENCE THAT INTRODUCES TOUCHSCREENS TO ELDERLY**, Ani Abgaryan: https://grad.sfsu.edu/news-announce/sfsudai-graduate-students-are-finalist-stanford-center-longevity-design-challenge

- **2015 SDC Finalist: Hexi Walking Poles**, Paris Vigrass

- **2016 SDC Finalist/1st Place Winner: City Cart,** Brandon Lopez & Eric Renard,
  https://www.behance.net/gallery/32677345/City-Cart
  https://www.youtube.com/watch?v=qGOvJo00014

- **2018 SDC Finalist/3rd Place Winner: Grow & Gather**, Seira Yasumatsu
  https://www.behance.net/gallery/64696679/Grow-and-Gather-garden-station

- **2018 SDC Finalist: Seven Bridges,** Jeannie Llewellyn, Jason Apple,
  www.generationbridges.org
  https://www.youtube.com/watch?v=6XQRnanpA14

This year two (2) SFSU School of Design Student Projects were selected as Finalist for this Year's Stanford Center on Longevity 2017-2018 Design Challenge. One of our Finalists, Seira Yasumatsu was Awarded Third Place for her **"Grow and Gather"** Project. Dr. Fisher assisted Seira in fine-tuning her project after it was named a finalist in the competition. "Grow and Gather" is a movable cart that incorporates support for walking and sitting, with storage for tools and produce. This award-winning project was Project that was generated in the DES 410 Product Design 2, Fall Semester 2017 (Prof. Ricardo Gomes and Dr. June Fisher). The 2018 Stanford Design Challenge Winners video features the Grow and Gather" project. https://youtu.be/rQjBsTN40fY

This year's competition attracted submissions from 74 teams from 49 Universities representing 18 countries across the globe. We are overwhelmed with joy, pride and appreciation to have two Finalist selected amongst this outstanding pool of international SDC Finalist! SFSU is the only University program in the 5 Years of the Design Challenge to twice have Two Finalist in One Year. http://longevity.stanford.edu/design-challenge-2017-18/2018/01/25/stanford-center-on-longevity-announces-2017-2018-longevity-design-challenge-finalists/

Dr. Ken Smith, Senior Research Scholar & Mobility Director at the Stanford Center on Longevity stated *"....in the first five years we've had 289 entries from 175 universities in 28 countries, so you (SFSU) can certainly claim to be doing exceptionally well against truly global competition."*

The articles and papers in this publication have been formatted to outline and articulate the design curriculum strategies and co-designing methods that have been employed to successfully engage the students with community partners and user-experts. These applied collaborative service learning experiences have been well documented in this special publication between our students, community partners, consultants and target users. The students have found tremendous resource in the learning outcomes and user-centered experiences. Over the years, we have had noteworthy success in collaborating with IDEO.org to beta test and employ their hallmark Design Thinking methodologies within our curriculum and research practices. Students in the DES 410 Product Design 2 Studio course and the DES 800 and 805 Graduate Seminars in Design students have greatly benefited from engaging with our community partners, or *"sages,"* as Dr. Fisher likes to describe them.

The KEY Drivers to success, centered around
HEAR (Inspiration/Empathy) **CREATE** (Ideation/Prototyping) **DELIVER** (Implementation) are:

1) Identifying a Valid and Vetted Problem [User/Environmental (setting) Conditions]
2) Identifying & Establishing a Collaborative Project Partner (organizational, institutional)
3) Panel of Experts (academic, community, design professional)
4) Conceptualization; Iterations; User/Expert Feedback; Refinement; Evaluation
5) Execution/Presentation

In 2013, the School of Design was offered a $25,000 **Hearth Homes Inclusive Design (HHID) Scholarship Award** for a 5-year period from Sue and David Siegel of Hearth Homes Community Building https://hearth-homes.weebly.com/achievements.html . The purpose of this inclusive design scholarship award was to encourage and attract promising SF State students to the field of inclusive (universal) design. The yearly $5000 scholarship was designed to support and promote talented students interested in pursuing a career that embodies Hearth Home's vision of creating a "Design for All" affordable and inclusive built environment. Hearth Homes sought to encourage undergraduate and graduate students to advance their academic careers and professional development in the field of Inclusive Design.

This year's 2018 HHID Award Recipient Alyana Feliciano is a DACA student who demonstrated a very compelling and well stated inclusive design goals relative to applications of UI/UX design. Her creative work project was designed to facilitate successful access and matriculation to the higher education system for diverse and at-risk underrepresented populations. The Committee found Alyana's creative work objectives to be very inspiring, promising and consonant with the scholarship of HHID in promoting Design for Social Impact. The Committee encouraged Alyana to continue her mission to use design as a catalyst, in an inclusive and collaborative manner, to facilitate the well-being and vision of underserved communities from a cultural and socio-economic perspective.

Over the five-year period of the HHID Award, the profile of the Scholarship Recipients and their respective design applications evolved from the physical factor to the social factor. During this grant period the scope of inclusive design applications broadened beyond the physical conventions of design practice and service. The Award Recipients have promoted and supported a new standard service design applications that expanded the inclusive design paradigm to more effectively address the social phenomena of mental stress, gender sexuality, higher education, and immigration. In this regard, inclusive design applications through our students and patrons took on the challenges in our society relative to promoting design as a creative and resourceful tool for development, equity, social change and service.

Hearth Homes Inclusive Design (HHID) Scholarship Award Retrospective Celebration of the five (6) Years of philanthropic benevolence, inspiration, and vision, through sponsoring the HHID Scholarship Award in the School of Design at SFSU:

- **2014 HHID Award: "Thermo Ring**," Kayvan Mojtahedzadeh
  https://lca.sfsu.edu/lcanews/2014/05/09/5485-industrial-arts-major-kayvan-mojtahedzadeh-places-second-csu-research
- **2015 HHID Award: "Improving the Eye-Drop Experience**," Trevor Meyers
  https://lca.sfsu.edu/lcanews/2015/05/20/737586-grad-student-trevor-myers-wins-cal-state-research-competition   http://gero.usc.edu/udcompetition/
- **2016 HHID Award: "ShiftBelt:"** Ryssa Marquez https://www.ryssalolita.com/
- **2017 HHID Award: "LevelHeaded:"** Kelly Sekins http://www.kellysekins.com/levelheaded-app/
- **2018 HHID Award: "Apply+**:" Alyana Feliciano https://alyanaf.myportfolio.com/apply-wip

Inclusive Design in the School of Design (DES) at SFSU:
The integrated approach of universal design principles into the curriculum development in DES has been consistent with the mission of the School. Part of this mission has been to promote an interdisciplinary educational program that serves a diverse body of students in the areas of Product Design and Visual Communication Design at both the undergraduate and graduate levels. Our inclusive design curricula emphasize design process as a means of problem solving, and our classes help students to build the technical, conceptual, critical, and collaborative skills required in design professions and community outreach. The School advocates a design program that is both inclusive and responsive in its representation of community- based needs, and services, as well as, the entrepreneurial creative start-ups and conventional professional businesses.

The integrated approach to inclusive design in the School is very holistic. It addresses the physical, as well as the social parameters of inclusive design. Its approach is both quantitative and qualitative. It is as interdisciplinary as it is inclusive. It is an approach that is socially and ethnically diverse, in its attempt to addresses barriers of economic disparity, gender bias, or racial and cultural difference in mainstream society.

The Process
The inclusive, interdisciplinary and collaborative co-designing community partnership network involved a series of participatory design focus group sessions, as well as scheduled design development sessions, with people who have experience with Accessibility, Aging in Place, Design Across the Lifespan and the Sustainability of Independent Living. This collaborative experiential design process consisted of continual engagement with the same, as well as, different groups. Concepts and applications evolved from conventional physical factors to more social, and cognitive holistic service design solutions.

These results led to successful community engaged scholarship, partnerships and collaborative ventures for the students, community partners and clients, that have broadened the scope of Inclusive design applications. Such is the case with Kelly Sekins', "Level Head" App to facilitate Mental Health care and reduce suicide rates among LGBTQ Youth. Equally, Alyana Feliciano's App that supports low-income underrepresented at-risk students navigate competitive college application process. These neo-Social Impact Service Design approaches activate and elevate design practice today beyond commercial mainstream convention. It makes design a more viable and diversified tool for development and social change, promote more creative social equity in education, health and the economy. Such design revision, enlightenment and services have resulted in the accumulation of award-winning innovative and compelling student creative work at international university design challenges, statewide university creative research competitions, as well as, professional, civic and community award venues. A select compilation of these

inclusive, collaborative ventures are featured in the proceeding chapters of this commemorative publication. These preliminary solutions and prototypes have stimulated discussion and further innovation throughout the academic, social and design professional community.

The Nathan Shapira Design Archive Project Network

The Nathan Shapira Design Archive, houses a rich body of materials representing design thinking, theory, events and objects of 20th century design. It contains well over 2060 known design books, both contemporary and collectibles, as well as articles, files, documents, audio and video footage dating from 1963 to 2008. These designated artifacts and assets are of significance to design curriculum, lectures; seminars; including documentaries on topics addressing: design education; design in developing countries, architecture, and design in Los Angeles and Italy, as well as international hallmark exhibits and conferences. The Archive http://nsdablog.wordpress.com/

Since its inception and establishment in the former DAI Department in August 2009, the Shapira Design Archive Project today in the School of Design, has:

- sponsored, promoted, and supported Graduate and Undergraduate Student Research Assistantships Internships in the School of Design (2009-2017);

- International Visiting Scholarship (2009-2018);

- Supported Faculty Sabbatical Research (2010-2011);

- Lectures; symposiums and workshops (2010-2017);

- Peer-reviewed articles at international conferences (2011-2018);

- hosting of international guests to the Archive; curriculum development and professional collaborations (2012-2018).

The Objective of the Shapira Archive Research project is to create a broader access and awareness of the benefits of design as a tool for the development of society, design education, community-engaged scholarship and community service learning applications. The objectives of this incubation lab space research is to establish an accessible, comprehensive resource and database for the promotion Design for Living and Social Innovation with the intent of augmenting and facilitating student creative research, education instructional support and collaborative project developments between university and industry-educational partners.

Access to Design Professions Program (ADP) 2013 Symposium and Workshop
https://adpsfstate.wordpress.com/2013/05/05/symposium-and-workshop/

The objectives of the Access to Design Professions Program (ADP) in post-secondary schools is to support the recruitment of people with disabilities into careers in design. The current new ADP projects for the AY 2012-2013 invited a wider audience that included other design professions as well as architecture. They include landscape, interiors, industrial design, graphic design, web design, textile design, information design, CAD, drafting, etc. The projects focus on one or more of the following goals:

- Teach people with disabilities about careers in design.
- Recruit students with disabilities into post-secondary design education programs.
- Develop professional interaction and understanding among design professors, disability services staff, career counselors, and vocational rehab counselors

One of the more significant outcomes as a result of the ADP Workshop, is that we were awarded a $25,000 Scholarship Development Grant by Hearth Homes Community Building.

Today, Inclusive Design at SF State is represented in many diverse and interdisciplinary areas throughout the university faculty, curriculum, administration, facilities and grounds. The university has made and delivered on its commitment to sustaining accessible, flexible and diverse Universal Design learning and built environment.
To this affect, the university has embarked upon and implemented programs in facilitating free, open and equitable access to the physical, technological and learning environment.

School of Design Community Partners

1. The Nathan Shapira Design Archive Project Network (NSDA)
2. Visiting Exchange Scholar, Dr. Qiu Yue, Dean of the Industrial Design Program, in the School of Arts & Design at Beijing Institute of Technology
3. SFSU Community Member, Visiting Scholar & Consultant, Dr. June Fisher, CEO(:Chief Elder Officer) at Aging 2.0
4. Gretchen Addi, Design Consultant with Aging 2.0 and former Design Director at IDEO and Design
5. Susanne Stadler, President of At Home with Growing Old (AHWGO)
6. Richard Chackerian and Richard Soward, SFSU 60+ Club
7. Ralf Hotchkiss, Director of the Whirlwind Wheelchair International (WWI);
8. School of Design Distinguished Alumni, Raymond Brusuelas
9. Judith Sandoval, JD, Community Activists, Photographer,
10. Judy Goddess, Journalist, Senior Beat

11. The Paul Longmore Institute on Disability (Prof. Kathy Kudlick)
12. Rehabilitation Engineering Program (Prof. Ray Grott)
13. Special Education Program, Prof. Sandi Rosen
14. Universal Design and Aging in Place, Gerontology Program, (Prof. Darlene Yee and Dr. Anabel Pelham)
15. Disability Program and Resource Center, Web Accessibility Standards and ACCESS Website initiatives
16. Academic Technology, On-Line Learning and Accessible Technology Initiatives
17. Center for Teaching and Faculty Development, Universal Design for Learning (UDL) Initiatives and Faculty Associates Program
18. IDEO.org and OpenIDEO.com

Conclusion:

I would like to take this opportunity to recognize and thank all of the Students, Faculty, Staff and Community Partners who have made Inclusive, Co-Designing and Collaborative Outreach, the hallmark and legacy of the School of Design at San Francisco State University.

I want to particularly, acknowledge Kelly Sekins, Design Layout and Chiamaka Onyemelukwe, publication assistant. I would also like to extend my appreciation and gratitude to the writers and contributors, especially the talented and dedicated students, associated with this 150th Issue of DFA. Your social consciousness, creative work and dedication to being the design stewards of our global society, is awe-inspiring and magnificent. I would be remiss, if I didn't note that, the distinct majority of the literary contributor are women.

I would also like to thank Professor Sunil Bhatia for not losing faith in me in providing me the opportunity to be a Guest Editor with the Design for All Institute for a third time! Congratulations Professor Bhatia to your commitment, dedication and inclusiveness in making this humble publication open and truly representative of the "ALL" that graces the moniker of your global publication!

In Memory of the our former Advisor and Community Mentor, the late Susan Goltsmans, Co-Founder of Moore, Iacafano & Goltsman (MIG), Berkeley, CA.

I would like to dedicate this "Design with Us, Not for Us," Special 150th Issue of the Design for All Institute of India, to Dr. June Fisher, and the SFSU Community Partners who make Inclusive, Co-Designing and Community Outreach Inspiring, Rewarding and "REAL!"

When Designing Products for Older Adults, Senior Supervision is Advised

June 8, 2018 by **Judy Goddess** This article originally appeared in *Community Living Campaign, Senior Beat*

Dr. June Fisher (Photos by Paris Vigrass)

SENIOR BEAT – The walking sticks Dr. June Fisher uses buffer her struggles with severe arthritis. And they might just give her an inside edge on the usefulness of products for older adults and those with disabilities. One of those retired but busy people, she spends a lot of time mentoring design students and professionals. And she is determined to imprint her mantra, "Design with us, not for us."

Too many products miss the mark, she said: shopping carts without brakes for hills, kitchen products and gardening tools that defeat a person with arthritis, monitoring devices that sit in a drawer.

"Products need to reflect the needs of people they're designed for," Fisher said. "While I appreciate the technical skills of design students and professionals,

I don't want a 23-year-old telling me what I need. It has to be a mutual relationship where elders set the agenda and participate in the development of those products."

For the past four years, Fisher has mentored teams in the advanced product design course at San Francisco State University taught by Professor Ricardo Gomes. In 2016, her team won first prize in The Stanford Center on Longevity International Design Challenge, a global competition that encourages students to develop products and services to improve well-being across the lifespan.

This year, her team won third place. It was a missed chance on cheap heirloom tomatoes that led to the creation of SFSU's 2016 challenge winner.

Designing Winners

SFSU Design Prof. Ricardo Gomes with SDC 2018 Award Finalist SFSU Product Design student Seira Yasumatsu & former SFSU Design Student SDC 2016 Finalist Winner, Brandon Lopez (Photos by Ricardo Gomes)

"A friend called and said they were selling heirloom tomatoes at the Ferry Plaza Farmer's Market for two dollars a pound. I got up, got dressed, and then realized that even if they were still available, I couldn't carry them home. I don't like to admit it, but I was overcome with despair."

She shared her dilemma with Gomes, who assigned it as a class project. The results was "City Cart," a combination walker and shopping basket with brakes, allowing those with mobility issues to walk, shop and return home without assistance.

"I spent a lot of time with June, going to the farmers' market, talking with her, walking around with her," said team Captain Brandon Lopez. "She told me she needed something more robust and stable to carry groceries than one of those pull-behind trolleys, and she needed some place to park her walker when she shopped."

The team developed "tons and tons of prototypes andshared them all with her," he said. "Partnering with Fisher was tremendous. Otherwise we would just be designing for ourselves."

This year, Fisher helped another student fine-tune her project after it was named a finalist in the competition. "Grow and Gather" is a movable cart that incorporates support for walking and sitting, with storage for tools and produce.

"We - Dr. Gomes, Dr. Fisher, and I - met every Friday at Dr. Fisher's house to discuss the project," said student developer Seira Yasumatsu. "Dr. Fisher has a beautiful garden, which she has trouble weeding. I shared all the prototypes I made – maybe 20 or 25 little ones, and then six or seven full-sized ones. Dr. Fisher's approach, "…design with us, not for us," is part of me now."

It was a crisis in the early days of the AIDS epidemic that turned Fisher to product design. As director of occupational health at San Francisco General Hospital, she knew healthcare workers were worried about contagion through needle sticks. She wanted to do something to alleviate their fears. She didn't find a specific solution, but found a new career.

She began attending classes in the Product Design program at the Stanford, where she had attended medical school. Eventually, she was appointed to a lectureship there, which lasted 10 years. She has mentored design students at the University of California-Berkeley and the California College of Arts, as well as those at San Francisco State.

She is also involved with Aging2.0, an interdisciplinary and intergenerational, global community driving collaboration around challenges and opportunities around aging. She said she's their CEO, or Chief Elder Officer someone who ensures that products are designed in collaboration with the people who would use them.

Fisher hopes to get more seniors involved inproduct design.

"I don't want to be the only old person working with these young designers. We need a multi-generational design class with a cadre of elders who have the ability to set the agenda and participate in the development of products."

(Photos by Ricardo Gomes)

Dr. Fisher helped San Francisco State design student Seira Yasumatsu fine-tune her entry in this year's Stanford Center on Longevity International Design Challenge.

Student Seira Yasumatsu Wins Third Place in International Design Contest

Wednesday, April 25, 2018   Written by — Matt Itelson

SF State continues to be among the most successful schools competing in the annual Stanford Center on Longevity Design Challenge, as undergraduate Seira Yasumatsu won third place in this year's competition.

Yasumatsu was honored April 17 for the portable workbench and rest device she designed for gardeners. Named Grow and Gather, it helps to facilitate community gardening for people of all ages and abilities. It takes the form of a movable cart that incorporates support for walking and sitting, storage for tools and a design that allows gardeners to configure the cart to their own needs.

Yasumatsu created her product in Professor Ricardo Gomes' Product Design II course. Fellow students Alyana Feliciano and Eva Rodriguez helped with graphics and video for the project.

SF State is the only university this year to have two teams among the challenge's eight finalists.

A team of graduate students — comprised of Jeannie Llewel-lyn, Crystal Choi, Jason Appler, Cassondra Hegyes and Yutao Lim — was named finalist for Seven Bridges, a platform connecting youth volunteers to seniors. They created their product in Lecturer Jane Rabanal's Seminar in Design Topics.

The other finalists are from Brunel University in London, National University of Singapore, Indian Institute of Technology Guwahati, National Cheng Kung University in Taiwan, University of Pennsylvania/Washington, Lee University and Virginia Tech.

This year's competition drew 74 teams from 49 universities, representing 18 countries.

Since the Stanford Center on Longevity Design Challenge was founded in 2013, six teams from SF State's School of Design have been named finalists — more than any other institution worldwide. SF State students Brandon Lopez and Eric Renard won first place 2016

"In the School of Design, we are very fortunate to work with students who possess tremendous empathy and creative innovation," Professor Gomes says. Stanford Center on Longevity Design Challenge

The Stanford Center on Longevity Design Challenge is a global competition aimed at encouraging students to design products and services to improve the lives of people across all ages.

The challenge is focused on ways to motivate and empower people in their daily lives both inside their homes and in their community.

The first place winner receives $10,000 and entrepreneurial mentorship. Each finalist team receives $1,000.

The challenge is made possible by generous sponsor-ship from a number of companies and foundations, including Halbert Hargrove, Target, Lixil, The Davis Phinney Foundation, Eskaton, and Home Care Assistance.

Grow and Gather: The Garden Station for All

by Seira Yasumatsu

Grow and Gather is a garden station that facilitates gardening for all ages and abilities and promotes social engagement for a happier and healthier lifestyle. My inspiration of **Grow and Gather** came from my eighty years old grandmother who lives in Japan and loves gardening and other global community partners who have passion for gardening.

Oba-chan, my grand-mother has been growing vegetables and fruits for decades in Japan. When the weather allows, she attends to her garden more than three days a week and spends five to six hours a day work-ing on her garden. Since I was a little girl, I was in oba-chan's garden helping her. Oba-chan's garden is a place where I have learned about healthy eating, longevity and how to maintain a strong family and cultural bond.

Grow and Gather lets you share the joy of gardening with friends, family and community members.

"Gardening gives me a feeling of being connected to the nature and the world."

Research has shown us the benefits of gardening.

By being outdoor and exposing themselves to nature helps people to relieve their stress. It allows them to exercise in a relaxing and sustainable way with their own pace.

By growing their own vegetables and fruits, it naturally increases the intake of vegetables and fruits and it teaches children and young community members to build healthy lifelong eating habits. Importantly, it creates opportunity for people to gather and socialize building their own community.

However; there is a challenge, especially elders,

gardening is a labor-intensive activity. After interviewing and working with community partners like Dr. June Fisher and observing community gardens around Bay Area, I found following challenges for the elderly and families with young children.

For example, there is no place to rest.

My grandmother has to go back all the way home to just sit down and rest when she is tired. Also, it is crucial for families with small children to have seating area nearby so they can see their children and they can get involved in gardening while working on the garden.

There is no easy way to get down on the knees and get up.

There is no work space or a storage unit where gardeners have easy access to essential gardening supplies.

It is inconvenient and cumbersome especially the

elderly and family with young children to go back and forth retrieving items they need from their cars or community storage spaces.

I used to help my grandmother find her gardening tools when she misplaces them somewhere on the ground. There is no table or space where gardeners can share their freshly picked produce in the garden. These challenges prevent the elders and other community members who might need more assistance from gardening.

Therefore, I have designed **Grow and Gather**; the versatile and mobile gardening station that promotes gardening for people of all age and ability. **Grow and Gather** facilitates happy and healthy lifestyle for all. It is a one and only garden station that answers the voice of all gardeners who have challenges to garden otherwise by facilitating the various needs.

The stable, simple and intuitive structure ensures us-ability, durability and safety of the product to be used by everyone. Unlike some gardening or mobility devices, it does not require adjustment settings ensuring the sturdy structure and the usability of the product for people who might have difficulties with fine-mo-tor skills. I selected materials which were sustainable, weather resistant, light, impact resistant, easy to clean and low cost. It weighs about 10 pounds that is similar to 1.25 gallon of milk or a large watermelon. Hence **Grow and Gather** promotes independent living and their self-confidence enabling everyone to garden without hesitation.

Market analysis

Grocery Cart	Garden scoot	Grow & Gather	Trolley
$49.97	$68.99	Approximately $87.00	$124.98
11 lb	38 lb	10 lb	70 lb
		Similar to 1.25 gallon of milk or a large watermelon	
"The front wheels are too small and it topples over easily and not suitable for seniors." - Joseph E.	"It's very bothersome to someone with back issues to bend over and push it to where it needs to be" - Kat M.	"It helps me to garden even with my bad back and knee" - Judith S.	"it is very flimsy, and was extraordinarily hard to put together" - Laura H.

Key Features

Support for getting up and sitting down

Portable kneepad with handles for support

Kneepad · Table · Workspace

Mobility

Storage

Work/Rest Bench

Key features include

- It is the station that provides resting space
- It helps with getting down to the ground and help with getting up
- It has a knee pad to work on the ground
- It has 2 storage compartments to store and carry gardening tools and produce. By placing an Eco bag, it makes convenient to take just that with you.
- It has a work table providing extra space to place any items you need
- It makes a garden a place for families/friends to gather
- It has 2 wheels on the back to help users to move the product where they need to go when they want
- It has matching colors for an easy assembling
- Grow and Gather promotes universal design applications which ensure the usability to everyone

Certainly, there is a big demand and interest in the product from user-feedback I received on top of the huge activity and interest in gardening industry all over the world. For instance, Chris Malfatti who is a member of 60 plus club in San Francisco found that the support handles of kneepad to be very useful to get up and down.

Material

Sides and Seats: wood-plastic composite

Soft Foam Mat: Bamboo Derived Rayon with PolyFill

Storage: ABS Plastic

Kneepad Handles: Aluminum Alloy

Additional Features: matching colors for easy assembling

Wheels: Polyurethane Foam
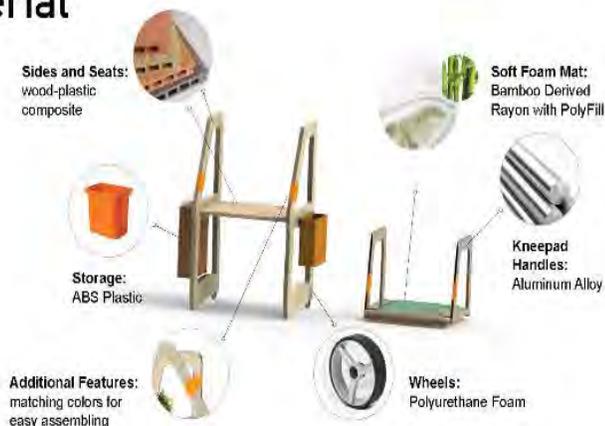
sustainable · weather resistant · light · impact resistant · easy to clean · low cost

Dr. June Fisher was aggravated to see the weeds in front of her house every day but **Grow and Gather** solved the problem. She used it as support and seat while pulling the weeds. From gardening group members of Felton Institute of San Francisco, I received positive feedback for the knee-pad and the flexibility of the product.

Grow and Gather addresses challenges particularly elders have but also for wider group of people with different needs. It lets you connect with nature, friends and family and promotes people's healthy life-style and longevity. I hope my product allows people to keep doing what they love to live happy and posi-tive life.

sevenbridges
Connecting Generations

SFSU Graduate Group DES 800 | Jeannie Llewellyn   Tim Lim   Jason Appler   Cassondra Hegyes   Crystal Choi

Seven Bridges an Intergenerational Program for Longevity

By Jeannie Llewellyn   June 25, 2018

Seven Bridges' design connects generations to foster independence and reduce the dangers of isolation in older adults and teens.

Our novel approach to the problem is to have the two otherwise disparate groups connect through a person-to-person service to accomplish simple common Activities of Daily Living (ADL's). ADLs could be anything from advocating for ones' self, dressing, personal hygiene, talking to strangers or packing for a trip. Each age group has its own ADL challenge.

Through activities like cooking, shopping, or even playing board games, the two groups are able to bridge their generational divide, establish a relationship, recognize each person as a being with thoughts, feelings, capabilities, and experiences. Thus, with time, they help each other BE independent.

Unlike traditional community service programs that bring teen volunteers to specific locations on set occasions for limited timespans, Seven Bridges' design allows individuals to find and connect with each other anywhere, any time, based on mutual interests, without requiring a separate organization to schedule an event. Seven Bridges enables them to build a continued mentor/mentee friendship on the foundation created by the initial activities.

The design would be implemented through a combination of web-based media, such as a website and a mobile app, as well as a network of volunteers, including people such as high school guidance counselors, parents, and senior community center administrators who conduct access to the community.

Activities of Daily Life (ADLs)

Older Adults:
Personal hygiene
Home economics
Managing medications
Dressing oneself
Walking independently
Continence
Feeding oneself

Both
Chores
Meal Prep
Money Management
Grocery Shopping
Transportation
Exercise
Fun

Teens:
Tipping
Pack their own bag
Advocate for themselves
Plan an outing
Talk to strangers
Order at restaurants
Wake up on time
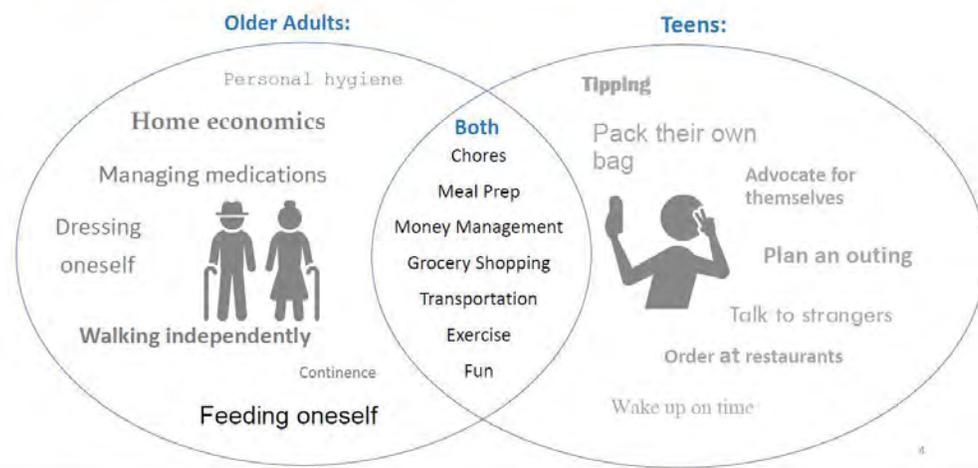
How a Connection is Made

Older adults log in or call in and select an activity

Teens are notified of opportunities

When both agree to an activity, the two are connected.

After the activity, both give feedback to Seven Bridges, and both have now made a friend.

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Imagine you are a 70-year-old retiree who lives alone in a senior community. You can function mentally, but handling heavy pots and pans may be unmanageable. On occasion, you feel having some help and a little company would be appealing. If you were interested in cooking dinner with a teenager, by signing up at the website yourself and set up your profile, or you would join Seven Bridges by either going through a volunteer liaison who would take your information over the phone to set it up. Once you're checked, verified and registered in the community, you could post that you would like to cook with someone on a particular day at a particular place and time.

A teen in the area, who most likely would have heard about Seven Bridges from the high school guidance

counselor, would have joined through the mobile app as a way to get community service hours for school, would receive a notification that there is an opportunity to cook dinner with you. If you both agree to accept the opportunity, you would connect and make dinner together.

It's a Win-Win situation, where the teen would learn how to cook and take on responsibility, and the older adult would get a little help and both could share stories as they cooked. In the end both would gain a friend.

In researching longevity, we realized that isolation and reduced social interactions were cited to decrease a lifespan not just in older adults, but also in teens. With Seven Bridges we attempted to address the "across the lifespan" component of 2018's Stanford Design Challenge of "Promoting Lifelong Healthy Habits through Design."

The concept of Seven Bridges began when our group discussed, At what age would longevity begin? We started with birth, and worked upward to find the age that would be most affected by a longevity program. We found the teen years a good start, as that was when a child would begin the path of adulthood, gain-ing independence through trials and tribulations. At the same time, we found that older adults had much to offer still after decades of experience, and would benefit from the exchange with a younger person, and increased social contact increased their longevity.

The Wicked Problem

1. Chores
2. Meal Prep
3. Money Management
4. Grocery Shopping
5. Transportation
6. Exercise
7. **Fun!**

With older adults checking a website or a phone call, and the teens utilizing their mobile phones, the user interfaces make it easy for both groups to see opportunities to connect to Seven Bridges, and to each other.

Some of the Design Challenges were designing a website that would work for the two very different demographics. Color schemes, font type and size, content all proved to require quite a bit of ongoing tweaking. Users were asked their preferences and feedback often.

Originally, the concept was to focus on a website for both groups, but from responses by teens, it was obvious that a mobile-based app was more apropos, whereas the senior adults preferred the screen of a laptop or desktop which allowed for large font sizes. The design challenge here were the two different aspect ratios (web-screens vs mobile screens), as well as the color schemes for each group. For the web-based app we chose blues, golds, and a white background, utilizing simple icons and simple labels for each step. On the mobile app, we went more boldly, and used black as a background, with the blues and golds, and white as accents.

Surprising insights we found from working with teens were their willingness and eagerness to work with older adults, and learn from them. They felt the senior adults would be less judgmental to talk with than their parents or relatives. The added benefit of high school community service hours – especially important for those going onward to college and university – seemed secondary as a driver to meet with older adults.

The one specific aspect that caught our attention was the isolation and depression that can occur and affect the psyche of each group: with the teens, the erratic hormone levels affecting their decision-making from unexpected experiences, especially relational ones, and for older adults the depression that can come about as they lose friends and family, and begin to recluse themselves, feeling disconnected and isolated. But, how to get the two groups together? With the ADLs mentioned above!

Realizing that both teen and older age groups have difficulties with various Activities of Daily Living (ADLs), we focused on six ADLs that overlap between teens and older adults, combined with a seventh activity that we added:

SEVEN BRIDGES

For the senior adults, most were driven by an interest in mentoring, passing on some of their knowledge and experiences. Yet, they expressed they could learnmuch from the teens, too. The older adults surprised the Seven Bridges team by how tech savvy many are. Both groups liked simple user environments that were to the point and easy to read.

One major point of debate and much discussion was Safety, Privacy, and Security, as the internet was becoming an open book. Concerns about elder abuse, scams, and violent crimes against both demographics were addressed, and much research was conducted to find a solution that would meet the needs for these two vulnerable and marginalized groups. Vetting of each person registering to participate was the first step in signing up at Seven Bridges.

We looked at the methods used by Airbnb and many of the dating sites. In the end, we focused more along the lines of Airbnb, with their three-step approval process, as a start. Tighter methods of security would continue to be explored and utilized.

The vision for Seven Bridges is global, and the project is scalable from one U.S. high school and several se-nior adult residences, on up to international organiza-tions. We see sharing of cultural aspects could easily come about with the commonalities of the ADLs, as well as educational, and economic, and not just age-based connections.

Our original proposal was for a pilot program of approximately 300 participants to start on a modest investment in the order of US$15,000 to $20,000, based on costs of IT development, volunteer coordi-nation, and typical basic overhead costs.

An idea to create more sustainable funding may also be considered coming from sign-ups for membership through students' parents, and adults with older parents to join Seven Bridges organization. Contract funding of memberships may come from organiza-tions for their residents or members may also be considered. Other funding options may come from endowments from the school districts, Department of Education, AARP, MediCare / MediCal, and other student and / or senior adults organizations.

www.generationbridges.org

https://www.youtube.com/watch?v=6XQRnanpA14

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SFSU Hearth Homes Inclusive Design Award Recipient Kelly Sekins Creates App for Mental Health

Written by Gospel Cruz, Tuesday, June 06, 2017

Suicide rates have increased to the highest levels in 30 years, according to a 2016 study by the National Center for Health Statistics. Kelly Sekins, winner of the 2017 Hearth Home Inclusive Design Award, invented a smartphone app that will attempt to reverse this trend.

"There are a million reasons why our mental health changes, and I'm working to recognize what those are," says the newly minted graduate in Visual Communication Design.

Sekins' game app, "LevelHeaded," allows users to track their daily activities and emotions, provide a safe space to share thoughts, prevent suicide and improve overall mental health. Hearth Homes founders Sue and David Siegel awarded the $5,000 scholarship to Sekins' project for embodying their vision of a future tailored to the needs of a broader population.

"I want people to feel safe to talk about their feelings like they're not being judged," Sekins states. "Especially now in society, it's becoming very difficult for people to just be themselves — they have to live in a cookie-cutter way, and that's unacceptable because we're all so unique."

Professor Ricardo Gomes says he is impressed by the design principles Sekins used in developing the app.

"We believe that Kelly had demonstrated a personal and sincere commitment to the concept of inclusive design and a desire to continue contributing to this area of design practice in her future professional growth and achievements," Gomes says.

Art, science, visual communications

Sekins' lifelong interests in art and science shapes how she approaches designing her app.

"My dad is a graphic designer and my mom is a nurse, so I have art and science as my background in my family," Sekins says.

In community college, she struggled with the choice of majoring in biology or art, deciding that a career in science might be the safer route.

When Sekins transferred to SF State, however, the Visual Communication Design program piqued her curiosity. The program is under the School of Design, but it results in a Bachelor of Science degree, which Sekins deemed the best fit for both sides of her brain.

Students in the program attempt to solve communication challenges through design involving posters, infographics, products and media. Sekins has gravitated toward media and web design courses, which gave her the tools to build the foundation for her newest project.

LevelHeaded game app

Each interaction with LevelHeaded begins by asking how the user is feeling, on a scale from 1 to 5. The user can then log those moods and daily activities, set up reminders, write in the journal feature or chat with friends.

Sekins considers logging to be the most important feature. Tracking a log of these actions can help spot problematic patterns of depression or anxiety. Users can even show results to their doctors or therapists to create better solutions for self care.

"Everything you do on an everyday basis affects your mind," Sekins says. "We don't know what we do in an entire day, and if we understood more on a quantitative level what we do, we might be able to solve our own problems."

If an app user is expressing suicidal intentions in the chatroom to another user, a live "gatekeeper" overseeing the conversation for high-risk language will step in and use immediate resources to help them in the emergency.

The app also includes avatars and a point system rewarding interaction to unlock avatar expressions, stickers and other character features.

Research and challenges

Tackling issues of mental health and suicide entails research and acquiring feedback from other potential consumers. Avoidance is one of the major challenges Sekins faces when doing polls due to the stigma surrounding the taboo subjects.

"Every time I bring up the word suicide people do not want to talk to me," she explains. She believes in the

importance to open conversations and be transparent about the issues that affect millions of people worldwide, admitting that she also suffers from mental health issues.

Over months of research, Sekins has consulted gamers, app developers, consumers and psychologists to inform how she designs the interface and ensure credibility in her work.

SF State's environment for growth

Sekins appreciates being in an accepting environment conducive to student success and with generous support from school faculty.

"The School of Design is growing and it allows the students to grow with it," she says. "There's such a diverse group of people from so many different backgrounds, classes and ethnicities, that it makes for a really interesting and dynamic learning experience."

She names faculty members Gomes, Jean-Benoit Levy, Pino Trogu, Heidi Dunkelgod and David Cox as mentors who encouraged her to work on the app and gave a last-minute push to apply for the Hearth Homes scholarship.

Future plans

Sekins plans to explore distribution platforms and pitch it to Facebook's Mark Zuckerberg as a preventative solution to the site's rising number of attempted suicide posts. The app will be released once she finds enough investors and staff to complete it, but until then she is focusing on programming.

"[This project] is my baby," Sekins says, referring to her everyday efforts dedicated to research, feedback and improvement.

Social media has shown correlation with self-image and worth, resulting in depression and anxiety for many including marginalized minorities like the LGBT community, whom she originally intended the app for.

With LevelHeaded, Sekins takes the initiative to change the relationships all people have with their phones, proposing that "we need to use technology to help people feel better" by allowing them to express themselves in a secure environment without judgment.

LEVEL HEADED

HEADED

By S.A.Martil
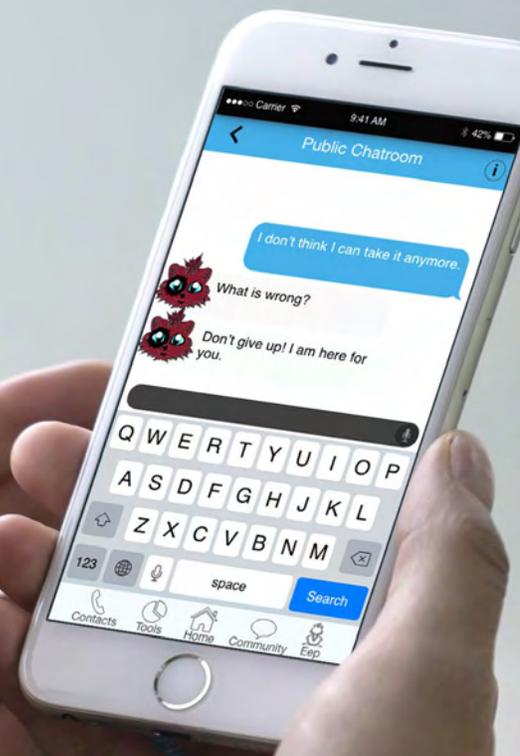
At twenty-five, death approached, but it was not time. Losing connection with this world and learning of her schizoaffective disorder diagnosis, Kelly Sekins would dedicate her life to understanding her physical, mental, and social health and to helping others. About one in four adults suffer from a diagnosable mental disorder in any given year, according to the Kim Foundation. Many of these people could have been suicidal as a teen, according to the questionnaire Kelly gave to teenagers and young adults.

The tenth leading cause of death in the United States is suicide, and its estimated that 85% of teens and 90% of adults own smartphones according to Pew Research Center's Internet & American Life Project in 2013. These numbers show there is an urgency for an app game-like experience that helps connect operators to victims and prevents suicide. The app Kelly created called LevelHeaded allows those with mood disorders to track themselves and make healthier

decisions. The app will not only help manage symptoms but also ensure that someone can get to a safe place mentally and physically when needed.

PROBLEM

There is a need to identify a smart game design solution to help prevent suicide among the LGBT community ages 13-25 years; however, this is not limited to the indicated community but is inclusive and universal to everyone who suffers.

WHY

Due to stigma in some societies, the LGBT community needs a safe space like a game design solution to help prevent suicide. LGBT teens are the higher risk for suicide according to Williams, T. M. In his book Teenage Suicide Notes, Williams includes a collection of letters that show how suicide does not discriminate against a cultural background, gender, class or geographical location. When people want to commit suicide, they turn to someone for emotional support, and psychiatric hospitals would help this demographic, but there is a stigma around being involved with psychiatric hospitals which could cause an individual to go further into a pit of despair leading to suicide. (Chung, D. T.,Ryan, C. J., & Large, M. M.) For example, according to USA Today, a young transgender named Leelah Alcorn took her life because of therapy that encouraged her to change her gender. According to Mark Henick, suicide is a way for these individuals to deal with a problem that burdens them so much they see no way out indicating that LGBT community are at high risk for suicide.

PREVENTION

Kelly studied suicide prevention protocol and felt a smart game design to help youth had potential to save lives in the LGBT community as well as others. There have been many developments in suicide prevention, for example the increase in public service announcements targeting suicide prevention. The idea of a "gatekeeper" has come up to assist those who might be suicidal. (Nasir, B. F., Hides, L., Kisely, S., Ranmuthugala, G., Nicholson, G. C., Black, E., Toombs, M) "Gatekeepers" date back to the 1960s where people would watch over one another and refer them to a specialist to identify if help was needed. With the increasing popularity of applications, it was only a matter time before these apps targeted suicide prevention to fill the needs not met by psychiatric hospitals. The future of suicide prevention is here in our hands.

RISK FACTORS

Knowing why LGBT commit suicide is only a step towards identifying those at risk. Both the LGBT community and those suffering from suicide have stigmas associated with them. The LGBT community has a struggled to be accepted by society. For some, this struggle in being rejected by family and friends has many to try or commit suicide. There is diversity among the community who need assistance. It is also important to look for language like, " I am a burden" or "I have a crush on my best friend who is a guy,"(Crisis Text Line). Trying to say themselves by saying, "I am not a burden," is a difficult challenge for someone who is suicidal, (Frey, L. M., Hans, J. D., & Cerel, J.) because to attempt suicide is being weak. Knowing the signs can save someone's life, and the amount of people feeling suicidal is enormous.

Susie Feels Suicidal
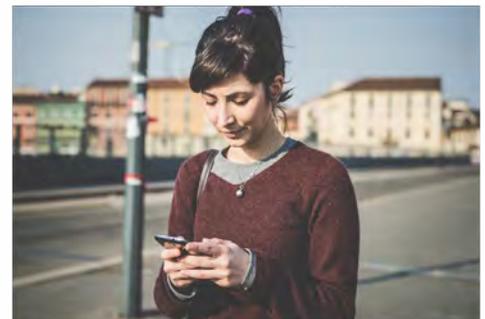
She Reaches For Her Phone And Picks Up The App LevelHeaded

Skyler Is Online and Connects With Susie

Susie And Skyler No Longer Feel Alone

ETHNOGRAPHY

In Kelly's research, she discovered how a game app solution for suicide prevention would have potential to save lives among the LGBT community. 78% of the people who took the survey reported being suicidal. When asked whom the individuals would reach out to during a time of crisis, most of the participants said they would talk to a friend first and were least likely to reach out to a partner. Kelly realized the importance of the connection with others and made that the central part of the app.

DESIGN

The design process, from start to completion, took into mind all the research about suicide prevention and the LGBT community and applied it to a virtual setting.

Susie no longer feels isolated and smiles.

The development of the LevelHeaded App started with a few sketches of the avatar using Disney exercises. As the drawings progressed, the avatar became more complex and advanced in the layout of the app. LevelHeaded started its creation by studying Jane McGonigal's concept for SuperBetter. This app encouraged the development of four basic human needs: physical activity, emotional resilience, social and mental resilience. The LevelHeaded app includes all these things in a smart game adaptation, with more interactivity and rewards. Physical activity gains the user points to unlock rewards for their avatar. Once the avatar is customized, the user can obtain social interaction in the chatroom where they can show off their avatar. When the user interacts with the app by tracking their sleep or water intake, they not only help their mental resilience they gain rewards for their avatar. The avatar works as a companion giving the individual emotional resilience. In the initial stages, the avatar was designed using Disney 3D styles as the influence, but the users wanted to keep a 2D flat graphic effect. The avatar would later be the stepping-stone for the final creation of the LevelHeaded app. The avatar represents a cute alien because many in LGBT community feel alienated from society. The avatar is a way for them to relate, but this not only for them. It is also for anyone who feels different as so many do. The user can even customize the avatar for the game as they progress, giving coveted rewards for regular app usage. The avatar can be seen in the chatroom and allows people to show how they feel by using the avatar's many expressions. During user testing, one individual expressed the app had too much

friend	28
therapist..	23
no one	22
family	20
hotline	17
blank	12
chatroom	12
Counselor	2
Partner	1
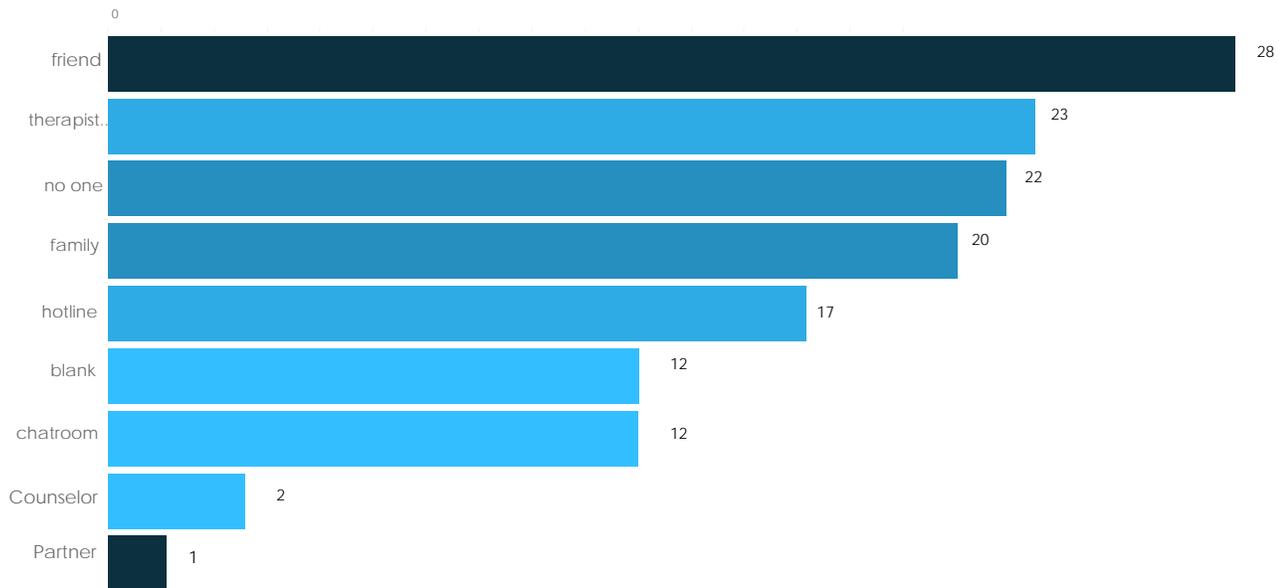
confusion about how to start the program. They clicked everywhere except the submit button. The user also did not want to give out their email to the software, because they feared negative repercussions.

APP SOLUTION

Kelly a smart game design solution to help prevent suicide among the LGBT community that is inclusive and universal to everyone who suffers. This app allows the user to track their feelings over a period of days, weeks, months, and years. It can also help users track medication intake. For example, if the user is on medication and has missed taking it that day, the graph that appears in the app shows the change in mood and allows the user to contact someone in case of emergency. All the information tracks itself on a chart that the user can show to their doctor.

Starting off is the Home screen. The user can either dive right into the app or learn more. Once the user entered the app, they are asked a question, "How are you feeling on a scale of 1-5?" and the user records

these "feelings" so they can track their emotions. The app is like the "gottaFeeling" app, but there are fun emoji and images that go with each feeling. Once the user had chosen a feeling the app shows a graph where the user can see how their emotions over a period of days, weeks, months, and years match up with their other data. The user's feelings then rate the points. Across the bottom are the days of the month, weeks, or years depending on how the user wants to see the chart. The user can also go into a private chatroom if they feel they do not want to share with everyone in the group chatroom. From here the user can pick whom they want to chat with privately from their friend's list. The contacts page is there when an emergency arises, or the app would not work to its full potential.

The user will be able to click on the emoticon on the graph. Once they click on the emoticon, the user's actions that day listed as bullet points at the bottom of the page. There is a To Do list for the user at the bottom of the screen. The more items on the To Do's list completed,

the more points the user earns unlocking new feelings. These To Do list items can be anything from hugging someone today to taking medication. Every time the user finishes something on their To Do list they hear a ding sound tone. The user swipes left to finish a task, right to edit a function, and they can scroll down to see more choices. The more items they complete, the rare feelings they unlock. The app is more satisfying than the "SuperBetter" app because the user gets to control what they win, unlike "SuperBetter" which has no option for the user to list what they want. There is a reminder page, linked to the existing calendar on their phone. A list of reminders is at the bottom of the screen along with a timer for each reminder. The current date is at the top of the screen, but the user can scroll left or right to other days. There is a contact page so someone can add and configure their list of emergency contacts. Emergency contacts will only be called on if the warning on the app is triggered. The user has a list of contacts to choose from, whether they need a friend or a suicide help hotline.

Screen 1 labels: Information, Home, Close App, Score Points, Go Back, Customize Options, Button to Game, Navagation bar
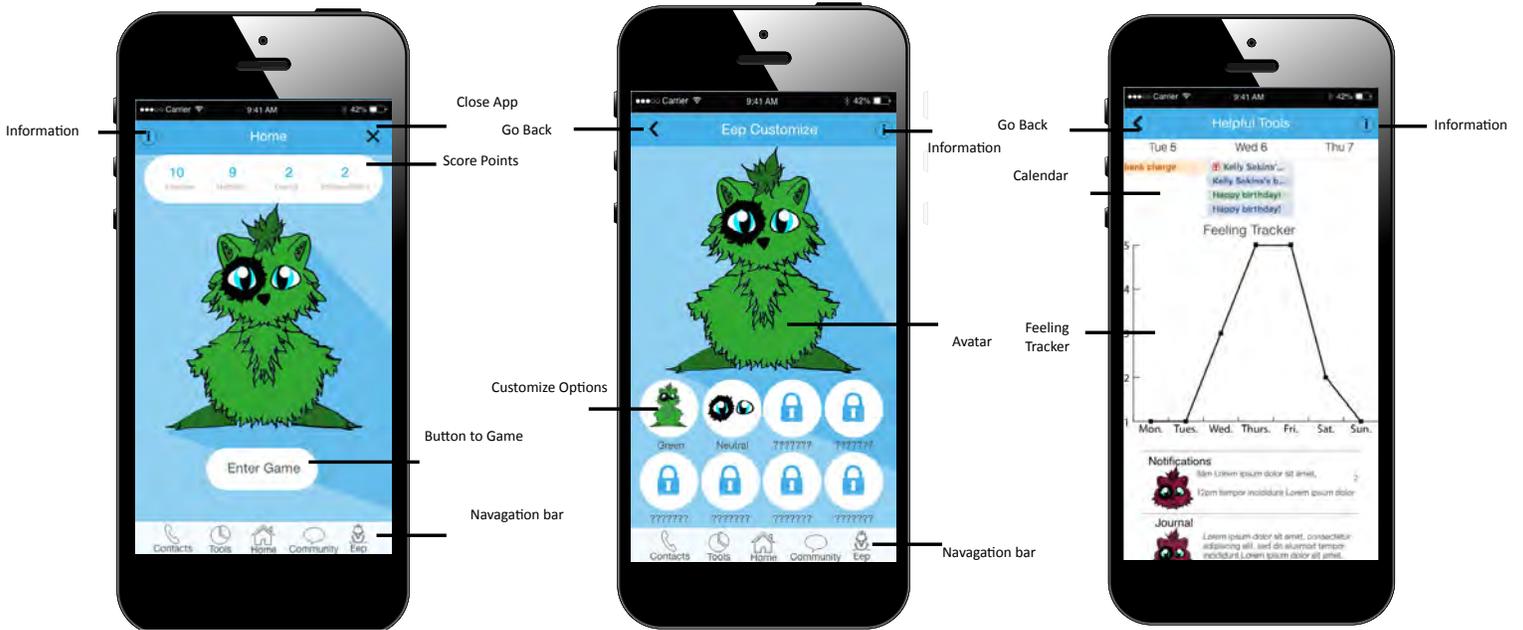
This is the home screen where you can see your avatar and enter the game or directly to other parts of the app.

Screen 2 labels: Go Back, Eep Customize, Information, Avatar, Green, Neutral, ???????, ???????, ???????, ???????, ???????, ???????, Navagation bar

The user can customize their avatar to show how they are feeling that day. The avatar starts out neutral and eventually becomes more extravagant as the user interacts.

Screen 3 labels: Go Back, Helpful Tools, Information, Calendar, Tue 5, Wed 6, Thu 7, Feeling Tracker, Feeling Tracker, Notifications, Journal

Here is the tools screen. Everything that is tracked in your daily life earns you rewards.

Screen 4 labels: Go Back, Public Chatroom, Information, Avatar of other user, i don't think i can take it anymore., What is wrong?, Don't give up! I am here for you., Navagation bar
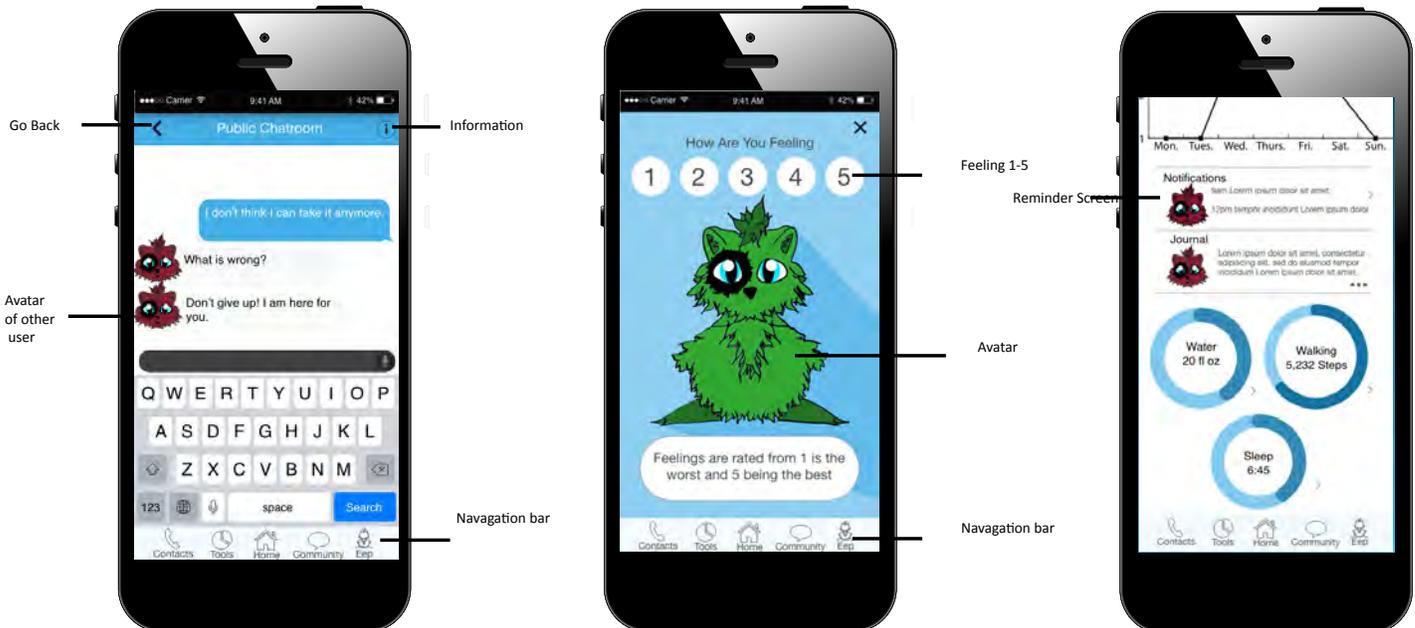
This is the public chatroom. The user can also go into a private chatroom if they feel they don't want to share with everyone.

Screen 5 labels: How Are You Feeling, 1 2 3 4 5, Feeling 1-5, Avatar, Feelings are rated from 1 is the worst and 5 being the best, Navagation bar

Once the user enters the app, they're questioned, "How they are feeling on a scale of 1-5?" The feelings are tracked for future

Screen 6 labels: Mon. Tues. Wed. Thurs. Fri. Sat. Sun., Notifications, Reminder Screen, Journal, Water 20 fl oz, Walking 5,232 Steps, Sleep 6:45, Navagation bar

Here is the tools screen. Everything that is tracked in your daily life earns you rewards.

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CONCLUSION

A smart game design solution helps prevent suicide among the LGBT community ages 13-25 years, this is not limited to the indicated community but is inclusive and universal to everyone who suffers. Levelheaded gives those with chronic mental health conditions a way to work with their healthcare provider, connect with others who feel the same way and support each other. This app has the potential to save lives. There is a need to help those suffering from suicidality among the LBGT, but it is not limited to these individuals. We all could use a little level-headedness.

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An Interview with SFSU Hearth Homes Inclusive Design Scholarship Recipient Alyana Feliciano

https://lca.sfsu.edu/lca-news/2018/03/22/817749-alyana-feliciano-wins-hearth-homes-inclusive-design-scholarship-award

Thursday, March 22, 2018   Ufuoma Umusu, SFSU LCA Correspondent

Alyana Feliciano, winner of the $5,000 Hearth Home Inclusive Design Scholarship, designed an app that supports low-income students by helping them navigate competi-tive college applications.

"My idea is to create an app that acts as a toolkit to guide and support low-income students by helping them navigate compet-itive college applications," Feliciano says.

"The need for such an app can be supported by numerous studies showing that while all students encounter struggles in the college going application process, it can be especially difficult for low-income students."

Feliciano, a 22-year-old Visual Communication Design major from San Francisco, plans to graduate this May. Her career aspiration is to become a user-interface/user-experience (UI/UX) designer with a focus on developing applications for low-income American stu-dents. Her design values align with her expe-riences as a low-income and first-generation immigrant student from the Philippines, she says.

Her goal is to create equitable and inclusive apps that will uplift the community, she also works part-time as an educational adviser for the Japanese Community Youth Council and Mission High School, working with low-in-come and first-generation students with college application needs. Feliciano also helps her students address issues of home-lessness, abuse, immigration fears and many more. This has been a major source of inspi-ration for her career aspirations.

How did you come up with the idea for the UX/UI design for the scholarship competition?

The idea for my app is created with the intention of helping students overcome common struggles such as mistranslating applications, lack of information and a lack of connection to available resources. There is a breadth of knowledge about the process; however, it is sometimes difficult for students to identify the information that pertains directly to them due to the sheer amount of resources out there.

My app will solve this by allowing the user to create personalized profiles that maximize inclusivity and will ultimately connect them with the information they need.

We encourage Alyana to continue her mission to use design as a catalyst, in an inclusive and collaborative manner, to facilitate the well being and vision of underserved communities from a cultural and socioeconomic perspective," Professor Ricardo Gomes says.

How did your studies as a design major at SF State help you to win the Hearth Homes Inclusive Design Scholarship?

The series of classes that I've taken so far — Design and Society, Graduate Research and Writing with Professor Hsiao-Yun Chu, Design Process, as well as my internship at the Nathan Shapira Design Archive with Professor Ricardo Gomes — have given me a unique perspective on problem solving, because I am now able to empathize and understand human problems.

I believe I came out of these classes with the experience and projects I needed to prove to the Hearth Homes Inclusive Design committee that I am fully com-mitted to using design as a plat-form for social change and equity.

Give us a brief description of your design process.

When approaching design problems, the first few things I think about is access. Will the app be universal in design, and can anyone access this? For example, if I were to design an app to promote local and fresh food, I would ask, "Can someone from a low-income community access this app? Or, can someone with physical disabilities travel to (x location?) without a problem?"

If the answer is no, I immediately turn to research and even use social media to gather data. From there, I gather inspiration from my market research and mood boards to put together prototypes with Adobe XD.

What advice do you have for students seeking scholarships in a competitive application process?

As an educational adviser myself, I was so inspired by my hard-working students who would take time to apply and seek for internships and scholarships de-spite having school, family responsibilities and work.
I, myself, work three part-time jobs but found it inspir-ing to apply for several scholarships not only for the money, but for something I could put on my resume.

My advice to anyone who is looking for scholarships opportunities is that they are already ahead of the game just by looking for the opportunity. I don't think about the competition because my approach is that I have a unique story to share. Once I stopped being scared of requirements and actually did the paper-work for one scholarship, I reused and tailored my answers based on the opportunity. Also, make sure you get to know your professors. They're people, too! I have two to three professors who I can really say are my mentors and are always willing to give me support with letters of recommendation or advice.

What are your lifelong career aspirations?

I have always had the dream to change the world, and I finally found that design is my platform to pursue it.

Becoming a UX/UI designer is my chance to uplift the voices of marginalized communities and put them at the forefront. The design landscape is always evolving, and I'm not sure where it is heading, but I can only look forward to becoming better at what I do.

35
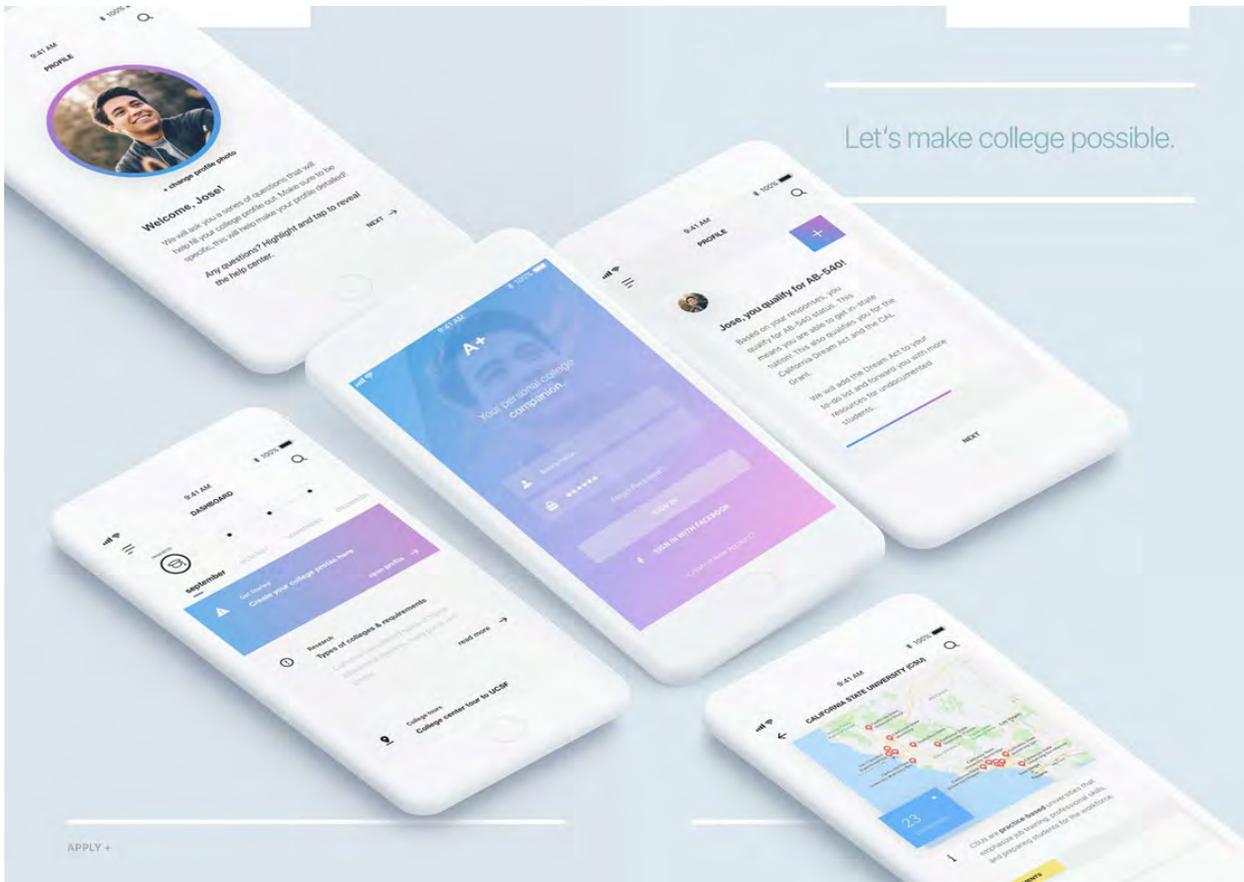
APPLY+ a college application toolkit

to guide and support low-in-come students

By Alyana Feliciano

My idea is to create an App that acts as a toolkit to guide and support low-in-come students through the arduous college application process. The need for such an App can be supported by numerous studies showing that while all students encounter struggles in the college application process, it can be especially difficult for low-income students. My App will be created with the intention of helping students overcome common struggles such as mistrans-lating applications, lack of information, and lack of connection to available resources. There is a breadth of knowledge about the process however, it is sometimes difficult for students to identify the information that pertains directly to them due to the sheer amount of resources out there. My App will solve this by allowing the user to create personalized profiles that maximizes inclusivity and will ultimately connect them with the information they need.
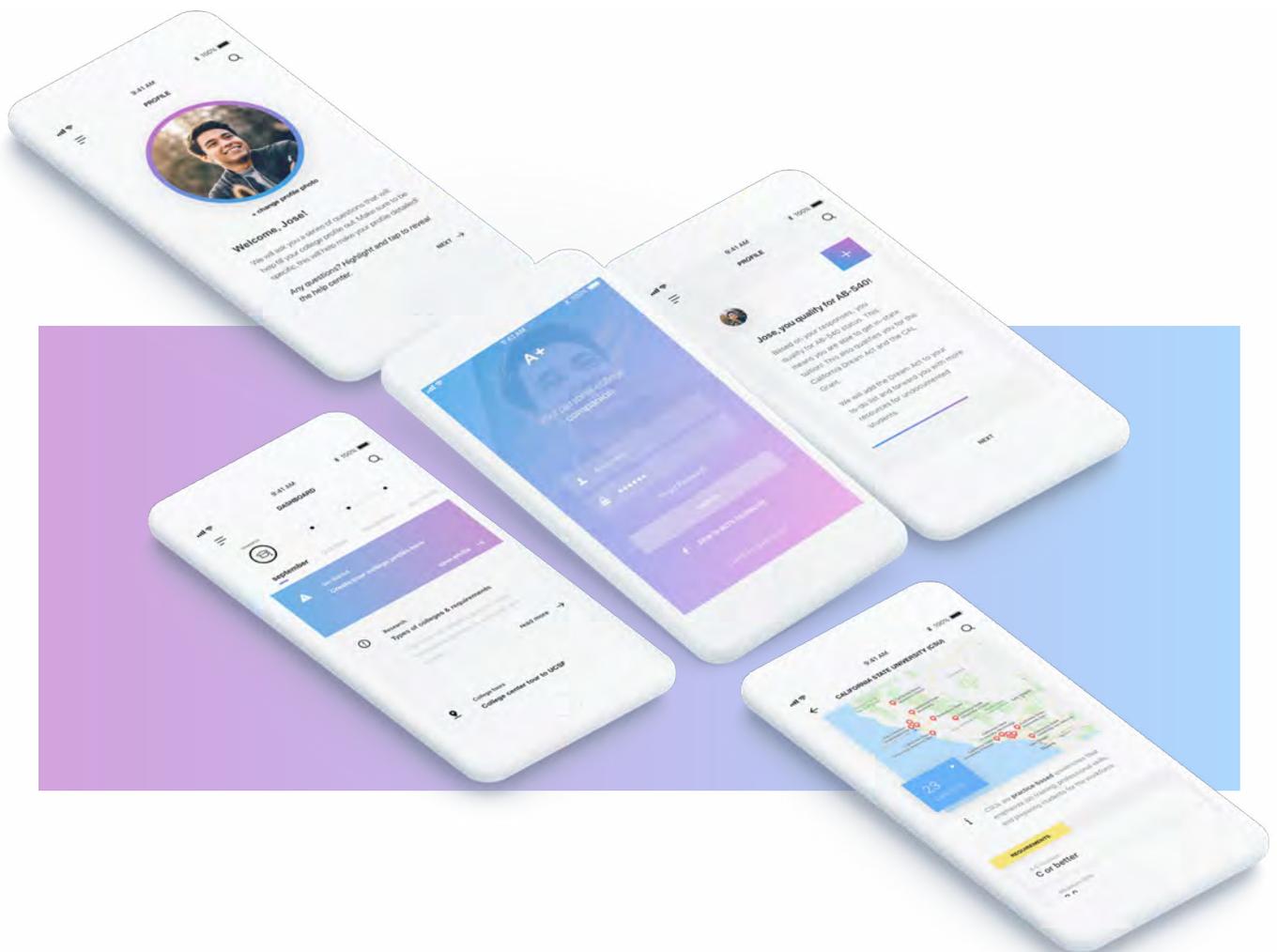
inclusive.
education.
access.
design.
user driven.

inspiration.

Coming from a low income background means that getting a college education was the answer to upward mobility in my family. The problem was, no one in my family knew how college worked and we lacked even the most basic resources to pay for applications or tests. It wasn't until I met my educational advisor who helped me with every step of the process that I was able to attend college and eventually major in design. I began working as an educational advisor for the San Francisco College Access Center, through the recommendation of my past mentor. As a visual communication student, I found so many problems in the process of going to college that needed a design solution. Even small steps such as entering fee waivers on the SATs or lack of updated information really discouraged my population of low income and first generation students.

PROBLEM STATEMENT

Students lack a resource that streamlines important, up-to-date, and relevant information for students applying to college, ultimately deterring many students for applying.

PROBLEM STATEMENT

The purpose of this project is to develop an effective application and website that will give inclusive and relevant support to any student who wants to apply to college.

expert interviews.

MOST STUDENTS ENROLLED IN A COLLEGE ACCESS PROGRAM ARE SUCCESSFUL IN NAVIGATING THE COLLEGE APPLICATION AND INFORMATION PROCESS. WHEREAS OTHER STUDENTS WHO WOULD OTHERWISE BEEN ELIGIBLE MISS DEADLINES OR LACK INFORMATION TO CORRECTLY SUBMIT THEIR APPLICATIONS.

JAQUELINE GONZALEZ, ACADEMIC ADVISOR AT THE EDUCATIONAL OPPORTUNITY PROGRAM (EOP), SAN FRANCISCO STATE UNIVERSITY

I picked Tyla Brown because I want my app to mimick what college access programs do, at a larger scale. She told me that there are a lot of different factors that determine the success of the program. Programs need **memorandum of understandings, support from schools, and most importantly data.** She highlighted that data from direct service is used to prove to the grantors (federal and state government) that LI/FG need the support.

TYLA BROWN, ASSOCIATE DIRECTOR, JCYC COLLEGE COLLEGE PROGRAMS, SAN FRANCISCO COLLEGE ACCESS

Maria is not only a college and career counselor at Mission High, but she is also in charge of the newcomer population, meaning students who are new to the country. Maria and I discussed a lot of the setbacks students faced beyond school. Many of our students lacked basic support in school and found that a lot of immigrant parents want students to go to school but there are a number who believe that students should go into the workforce to help the survival of their families. **This is partly due to parents not having formal education**.

MARIA SERVELLON, COUNSELOR, MISSION HIGH SCHOOL

interview.

JAQUELINE GONZALEZ, ACADEMIC ADVISOR AT THE EDUCATIONAL OPPORTUNITY PROGRAM (EOP),
SAN FRANCISCO STATE UNIVERSITY

SINCE YOU WORK WITH A SPECIALIZED POPULATION, FOSTER YOUTH, OR LOW-INCOME, FIRST GENERATION YOUTH, WHAT ARE THE TRENDS YOU'VE FOUND IN GENERAL WHEN IT COMES TO YOUR SPECIFIC CASELOAD?

They need a lot more guidance; not necessarily hand holding but you definitely need to follow up and talk to them and make sure they follow a plan. The most important thing is follow through, you know, checking in and emailing them because a lot of them, it's their first time coming to college. They're stressing about housing in San Francisco, they're stressing with how expensive everything is and are trying to find jobs right away. They're stressing about not having a family, a support system so they come to our space and want to talk and hang out, but, we have to redirect them in terms of academics. We teach them continued development in skills like organization, budgeting skills, we do a little bit of everything with these students and thats where the holistic process begins.

HOW ARE YOU COMMUNICATING WITH YOUR STUDENTS AND WHAT HAVE YOU SEEN WORK AND NOTWORK?

We have Campus Solutions, which is a part of Oracle where I have access to their ID numbers, transcripts, degree process reports, etc. But that's it. We usually receive our caseloads of students through a spreadsheets and that is how I email my students individually. We don't have the tools where I can email students in an important platform, like the student portal. Like high school stu-dents, college students need to learn how to check their emails as well… San Francisco State in general, sends so many emails so my messages get buried under that. Students are falling through the cracks because they are missing important information.

what i've learned.

I found that while trying to combat multiple layers of setbacks, and requirements, we cannot hand hold students because they will become dependent. Originally, I wanted to make an app that has all applications pertaining the college going experience in one form. This idea would be a disadvantage to students because it would not teach them to be resourceful. I need to balance what can be done and what students can learn. In my discussion with Maria, the college and career counselor, I mentioned that I wanted to add a feature where students can take a photo or upload their transcript file and it would calculate their GPA and recommend specific things like retaking a class, or taking a more challenging class. She pointed out the fact that students need to learn how to read their own transcripts, and find ways to discuss concerns with their counselor. She suggested a feature where students can input their transcripts and the app/website translates what requirements they've fulfilled and what else needs to be taken. These are part of the user's experience that I need to take into consideration when developing and designing my project.

- **APPLY+ should encourage dialog between the student and important key players such as teachers, counselors, advisors, mentors, parents, and community members.**

- **APPLY+ should not be an app that does all the work for students, rather be a supplement or a toolkit in figuring out what students will need**

- **APPLY+ should be easy and intuitive to use, and can be accessed by all students, not just the LI/FG even if they the target population**

concept proposal.

I propose to create a website and app toolkit that consolidates all applications pertaining the college going process. I am inspired from programs/ websites such as TurboTax that make income tax preparation easy by explaining and breaking tax code language in simple terms. This allows people who don't have backgrounds in working with taxes (college applications) be more independent.

DELIVERABLES
iOS App
Website

REQUIREMENTS
Must have customised content
Be knowlegable of special circumstances
Easy and simple to use

"WE SHOULDN'T EXPECT [FIRST-GENS] TO CHOOSE BETWEEN THEIR PAST AND THE PROMISE OF THE FUTURE, OR MAKE THEM ASHAMED OF WHERE THEY COME FROM."

Richard Greenwald, "Think of First-Generation Students as Pioneers, Not Problems"

Chonical of Higher Education, 2012

sketches.

My sketches are based on early ideas
based off my experiences from working
as an educational advisor.

Lets get to know you
↓
College profile
. has to be simple

Basic info
school info
personal info
interests

User Flow

Dashboard
Sign up for SAT

"First, lets connect
your college board
account"

I have an account
login?

I need an account
signup
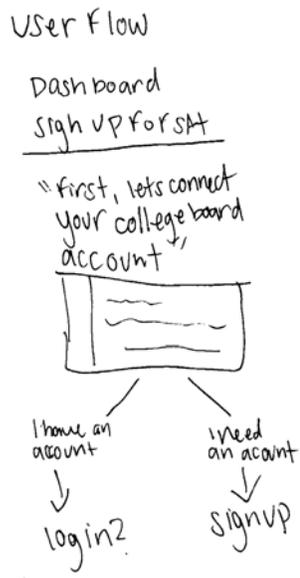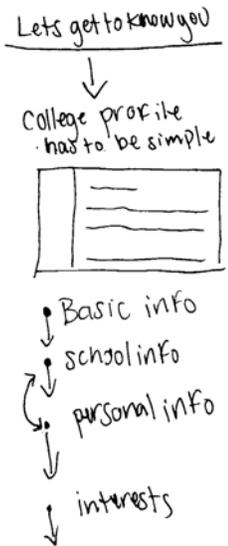
• 5 senses Theory
• Familiarity vs reputation

doesn't Know
where to start

Who's
helping you?

No one

First generation

Low income

works
to help family

has good
dries grades

</apply>
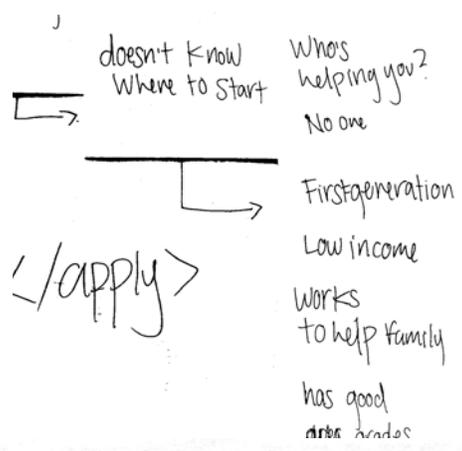
— ready up for college
— doesn't have resources
— First to go to college
  (First generation)
— no college center at school.
  — also, everyone is white
— hard to understand hisstory
  — works part time
  — asb president

JOSE ROD.
MHS

CALIFORNIA STATE
UNIVESITY

APPLY+

AUG SEPT OCT
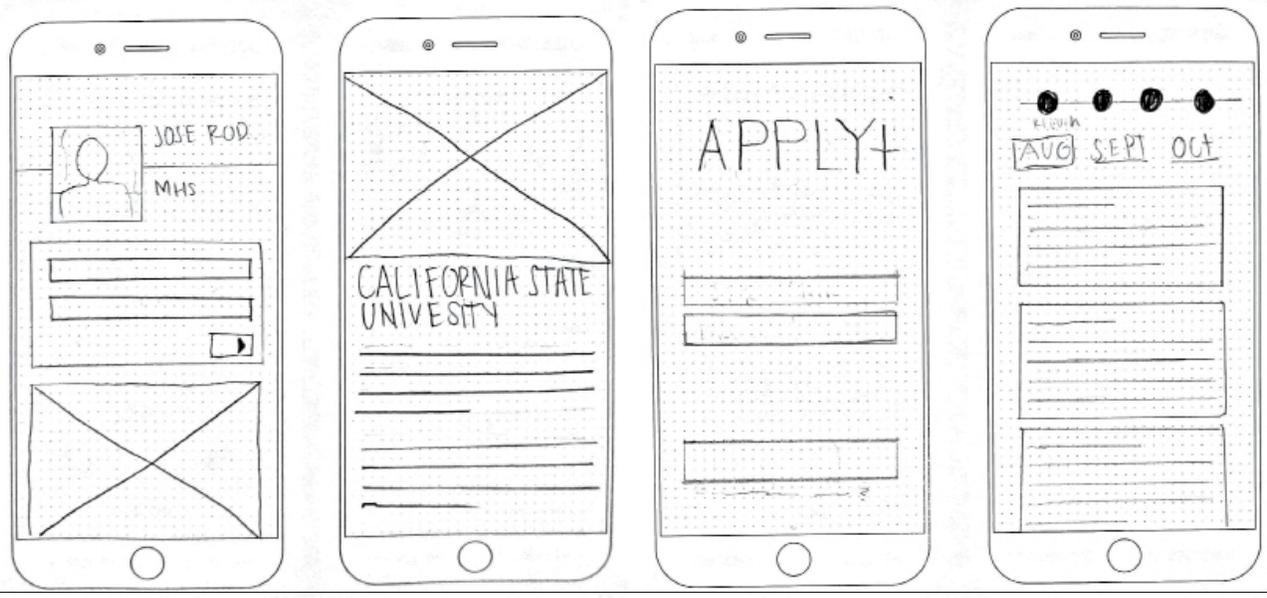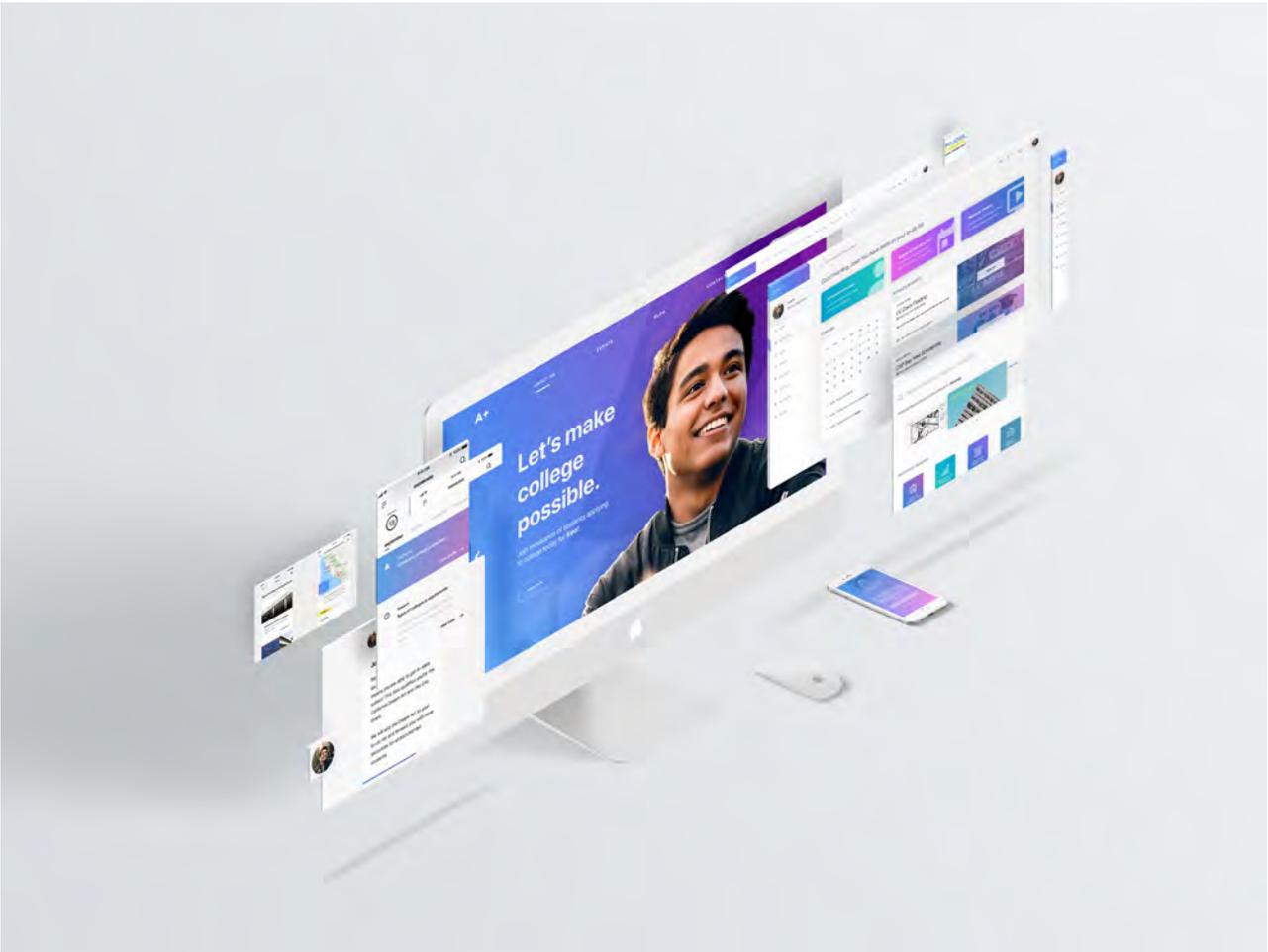
student feedback.

Seniors

I've asked my students to look through my initial app and website and they gave me a few recommendations. Since they aren't design students, I didn't get a lot of feedback in terms of usability but more of what students would like to see in terms of features. A lot of them said that it's useful and would have liked to use the app in their application process.

It would be nice to a have a checklist so I know what to do. I think a lot of this stuff is so confusing and we don't have a place to look for all of it.

Raven A.

I know college professors will not remind us about assignments and they are strict but it would be nice if we can recieve reminders about important deadlines...

Danny H.
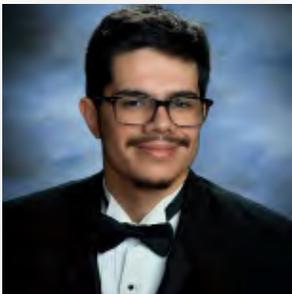
Would be cool if there was a way I can compare different majors or different schools in one page. I hate having to go back and forth cause there's millions of pages

Jose R.
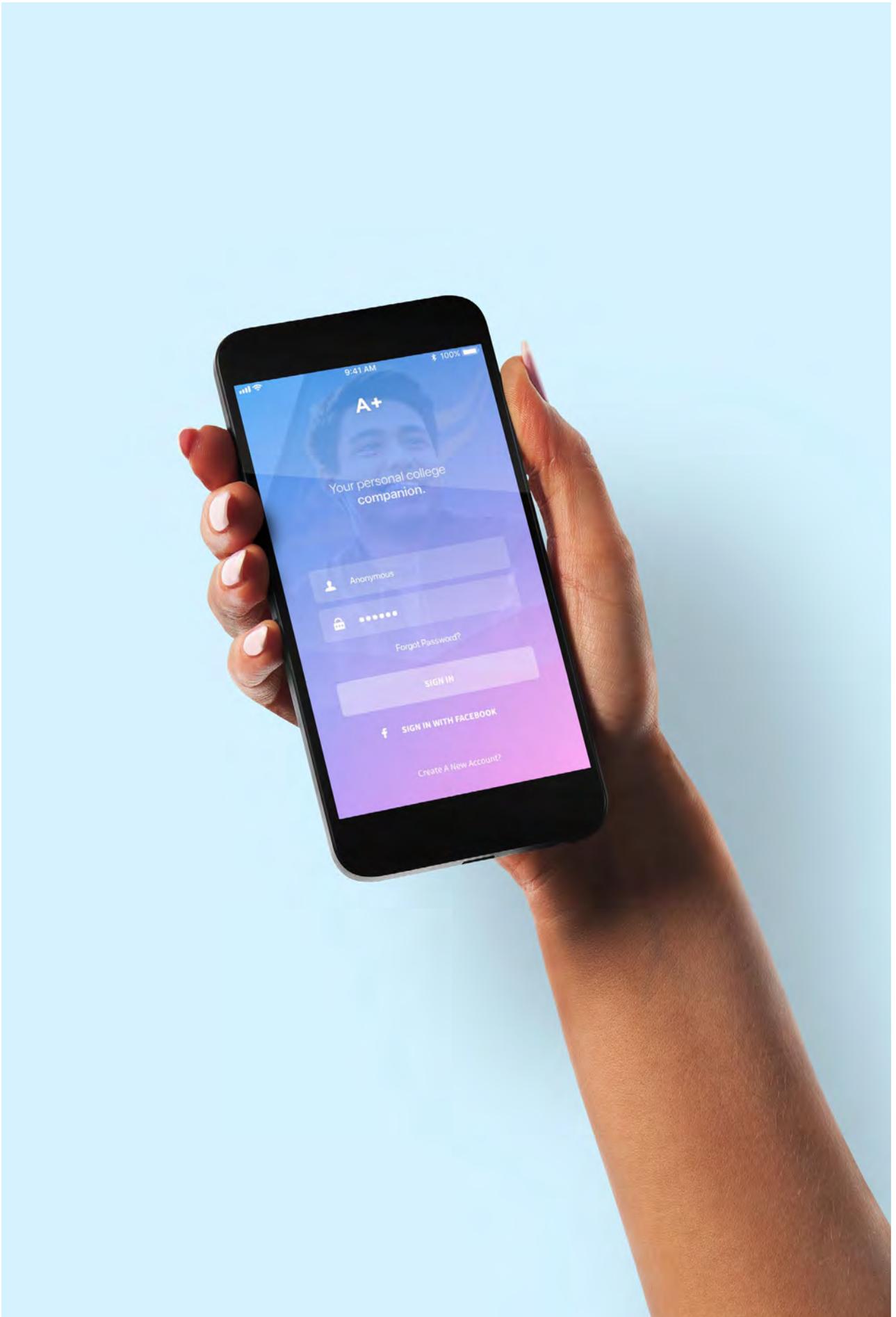
main features.
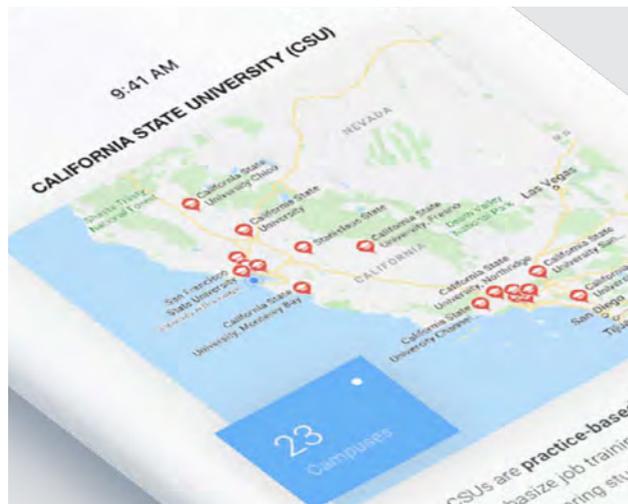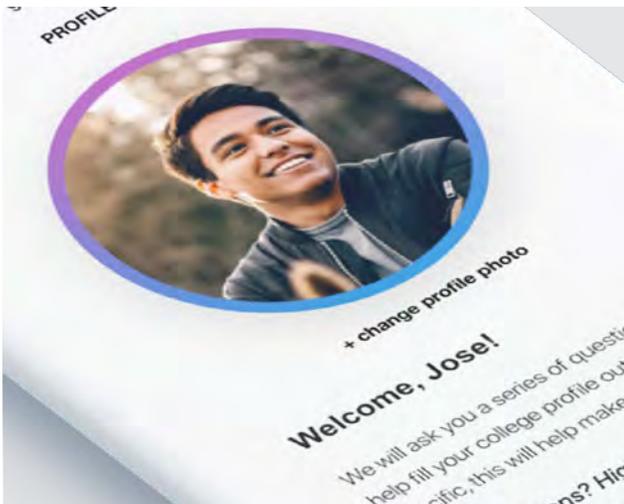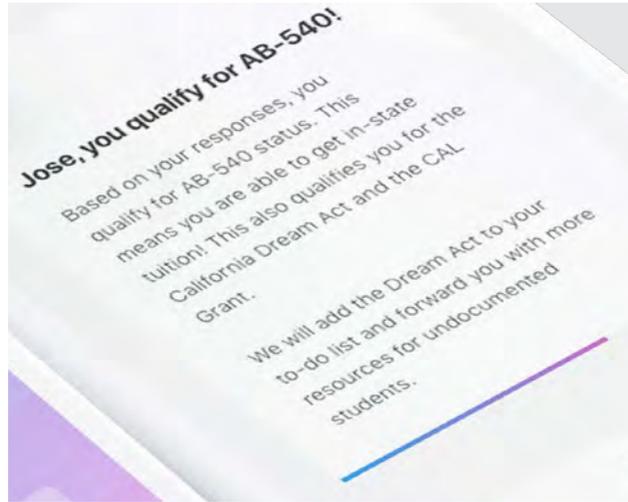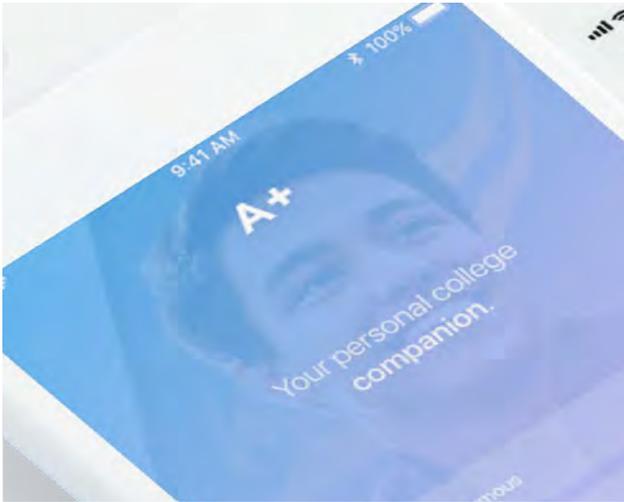
REMINDERS
There are reminders embeded in the calendar and announcements sections for both phone and desktop

PERSONALIZED CONTENT
Each student will have individualized content that will be relevant and important, AB540, Foster youth content, etc.

INTERACTIVE WORKSHOPS
Students can take in important information through interactive and video workshops

INPUT INFORMATION & INTERGRATION
Students can input confidential information such as transcripts and essays and will help intergrate info into applications

phone screens.
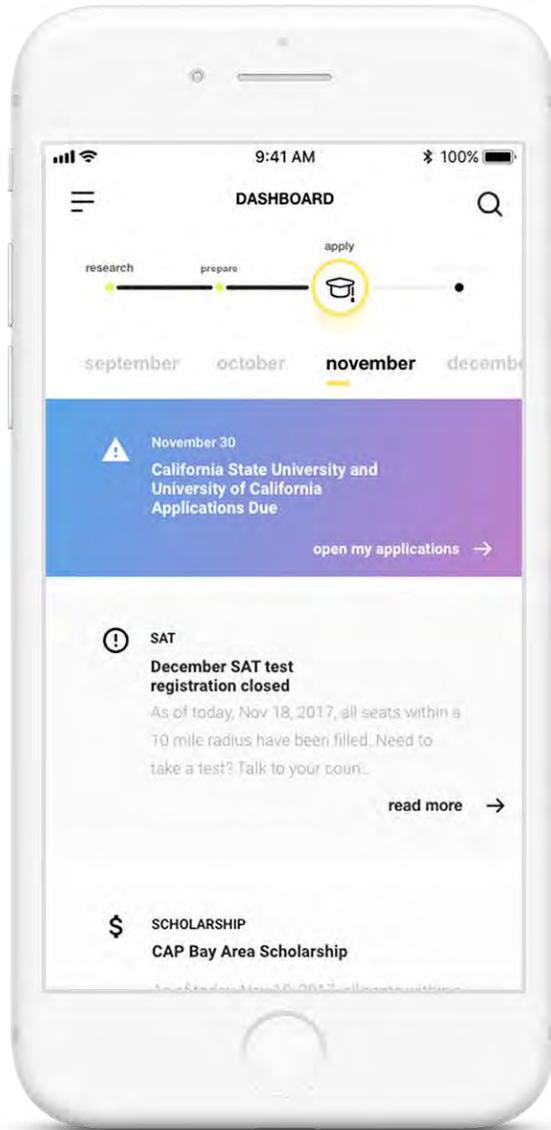
Menu page
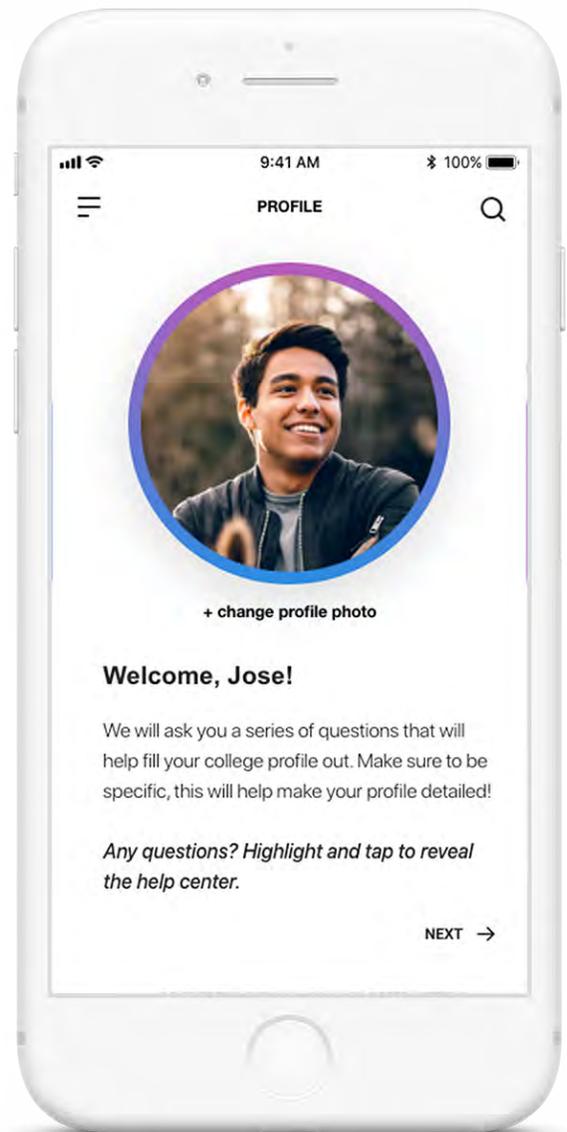
Landing page for student profile quiz

importance of study.

After conducting research on two different groups, current high schoolers and college students/graduates, I found that the answers give me more insight to the issues. 54% of college/graduates participants were LI/FG. More importantly, I found that a high percentage of students found it extremely difficult to go through the application process.

PARTICIPANTS

100%	
	91%
80%	72%
	76%
60%	61% 70%
54%	
40%	
20%	

of those surveyed were either LI or FG

found it difficult to apply for college (testing, financial aid, applications,

of those surveyed used the internet to find

■ Currently in college or graduates   ■ Current high school seniors
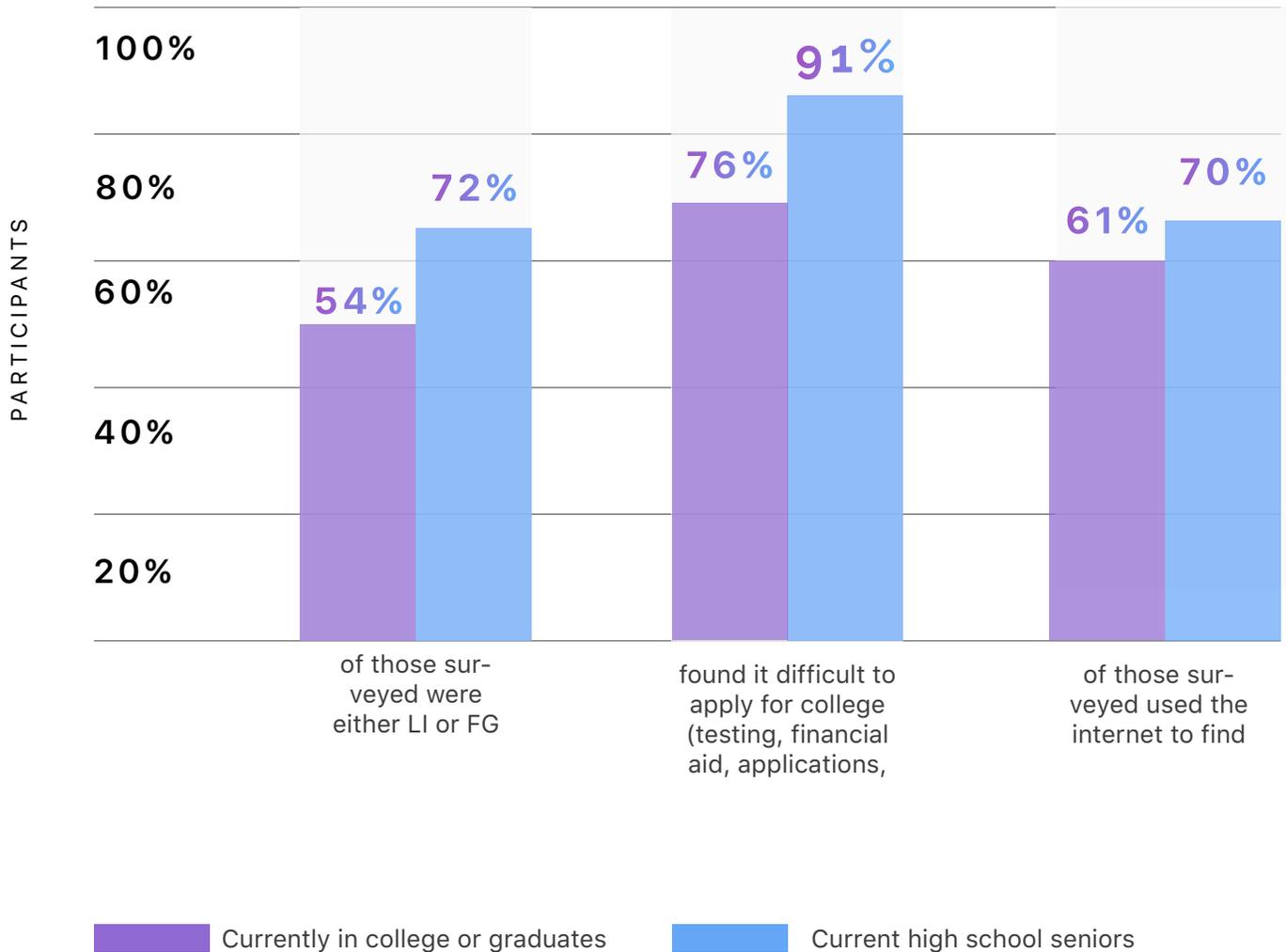
survey: where did you wish you recieved all your college info from?

wish I had all of my college information in one place on an app
A.B, Seattle, WA

I wish I got my information from an organized body (app or whatever medium or mode) which would inform us the specialization of each school and also what they offer so that we would be more informed when it comes to choosing which school to attend.
K.S, San Mateo, CA

Would've loved to have app/text reminders when I was applying! Recently thought of this when I was helping my cousin apply for schools. It would've been useful to have all the information aggregated in one place
Y.T, St. Louis, MO

I would have liked to have almost like a personal guide or chat I could access whenever I had questions.
G.A, San Francisco, CA

A one-stop info centre; be it website or pamphlet with specific categories such as enrollment, majors, finance etc.
T.K, Oakland, CA

I wish I had gotten my information and reminders through apps, online, or even more hands on approach by having colleges visit during high school
L.T, New York City, NY

I... never thought about that. Student fairs are okay, but an unified website or app would have been nice.
K.K, New York CIty, NY

I wish there's an app where we can have an advance search on the high institutions about its location, fees, ,the subject that available and the type of program which makes it easier to choose the best place to enroll
N.R, Kealakekua, HA

Survey sample: 100 answers
Posted on Twitter for random samples, survey answered through Typeform.com

Questions match similar to California
college appplications
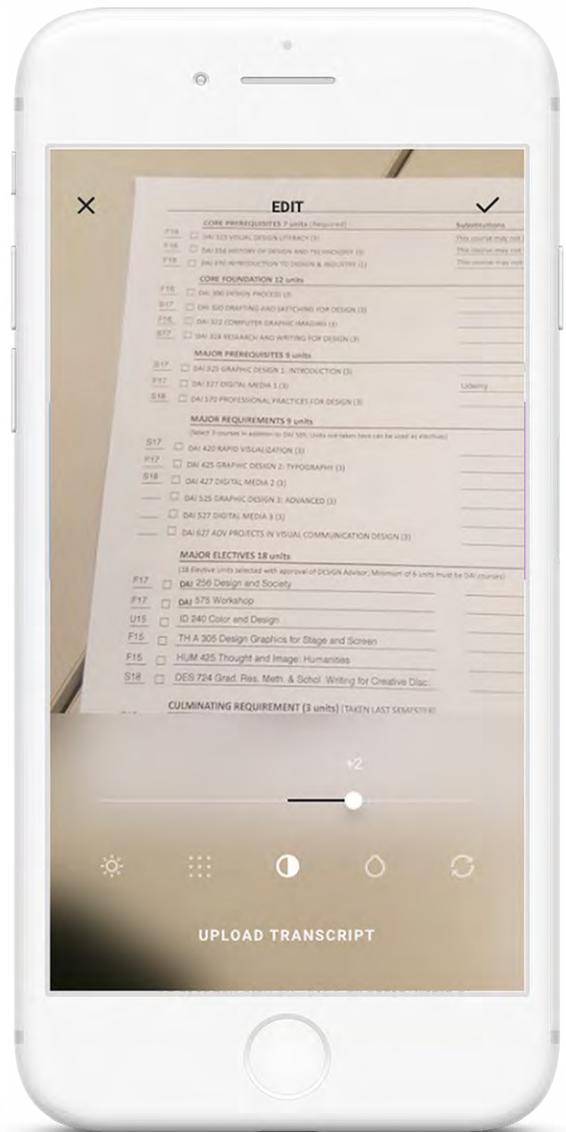
Students can take photos of
documents such as transcripts

phone screens.
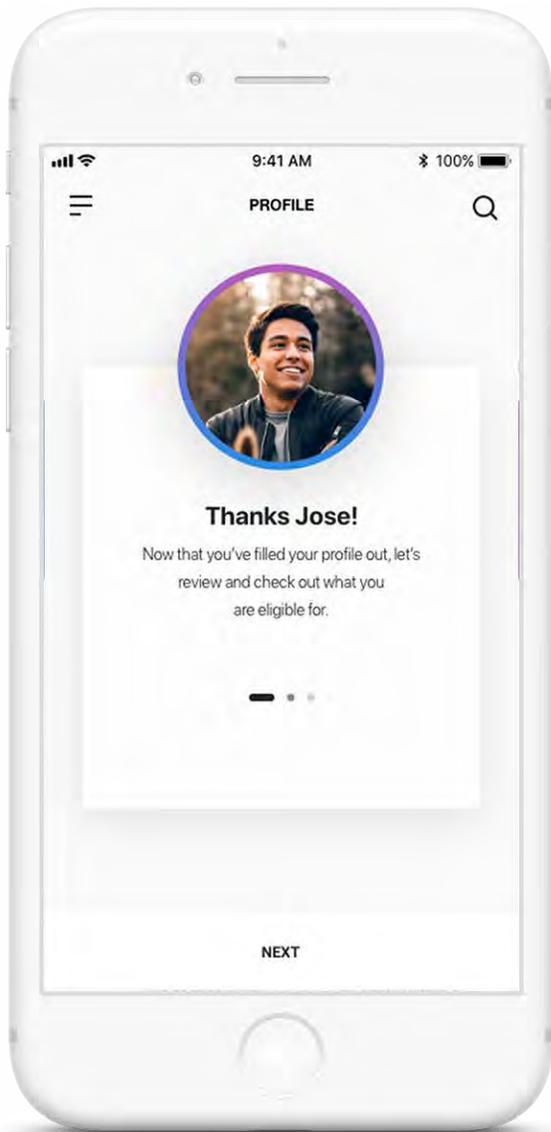
Dialog is friendly
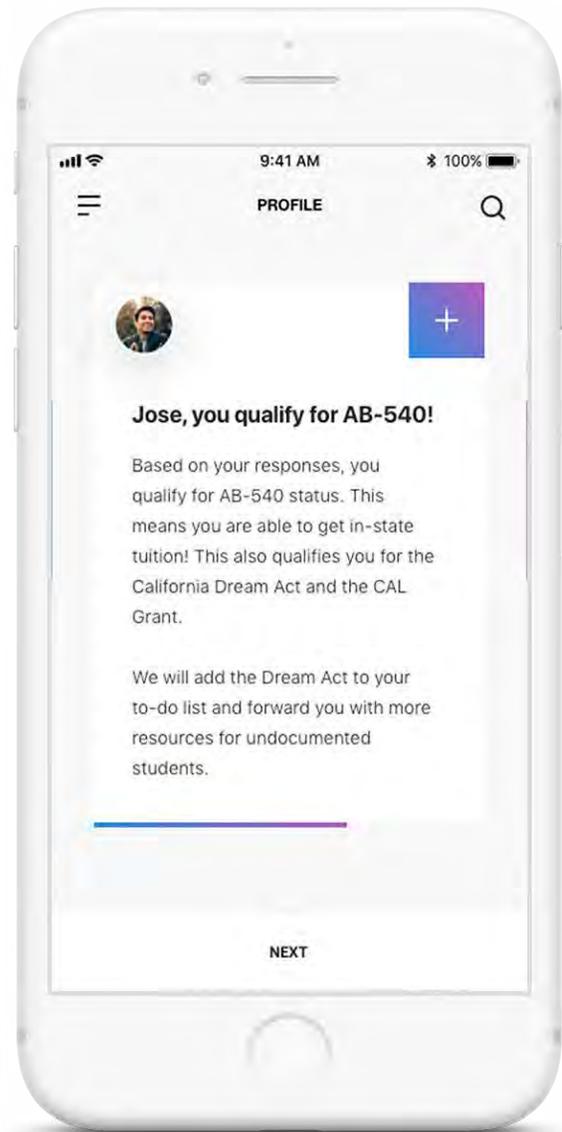
Students can find out what they qualify for.

web screens.
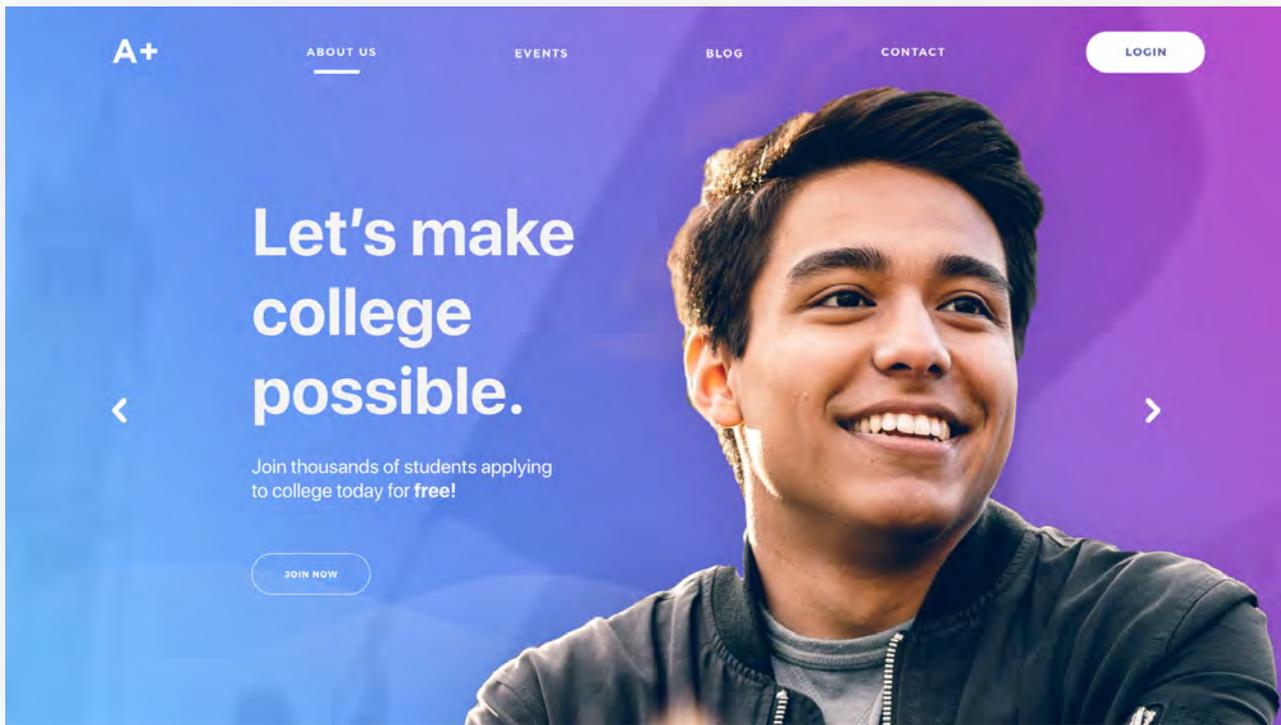
Landing page
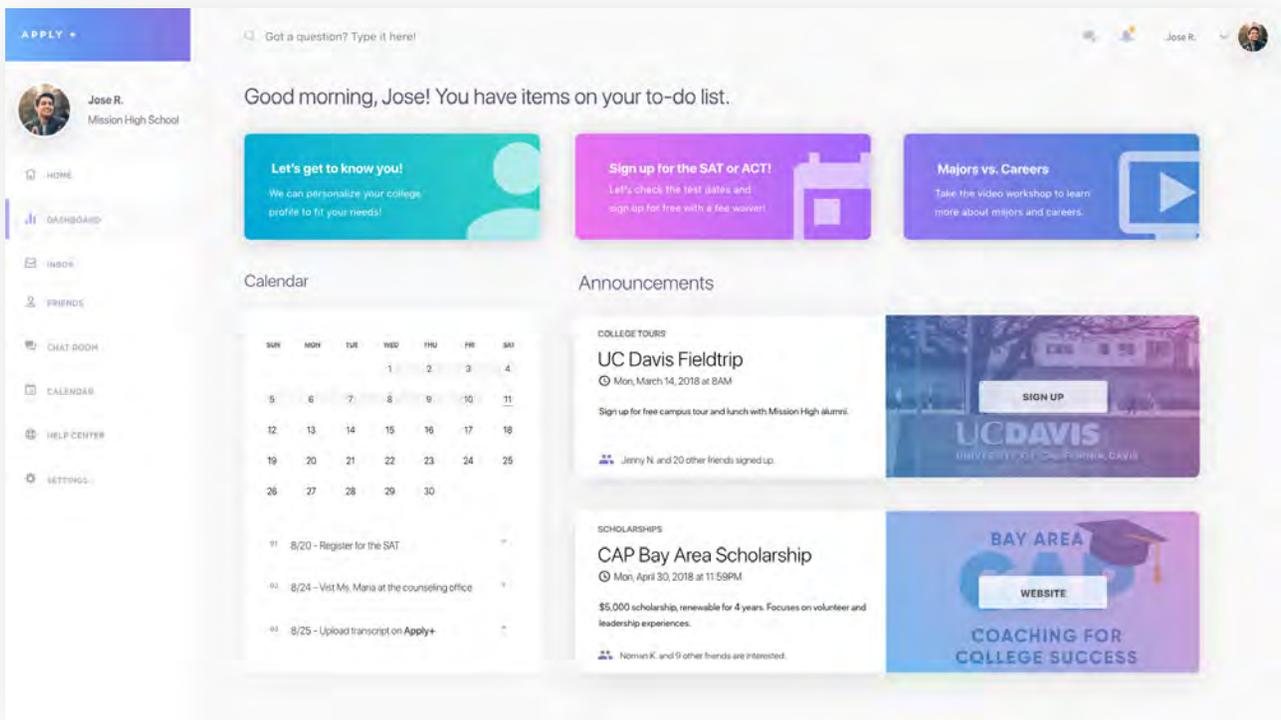
Dashboard

web screens.
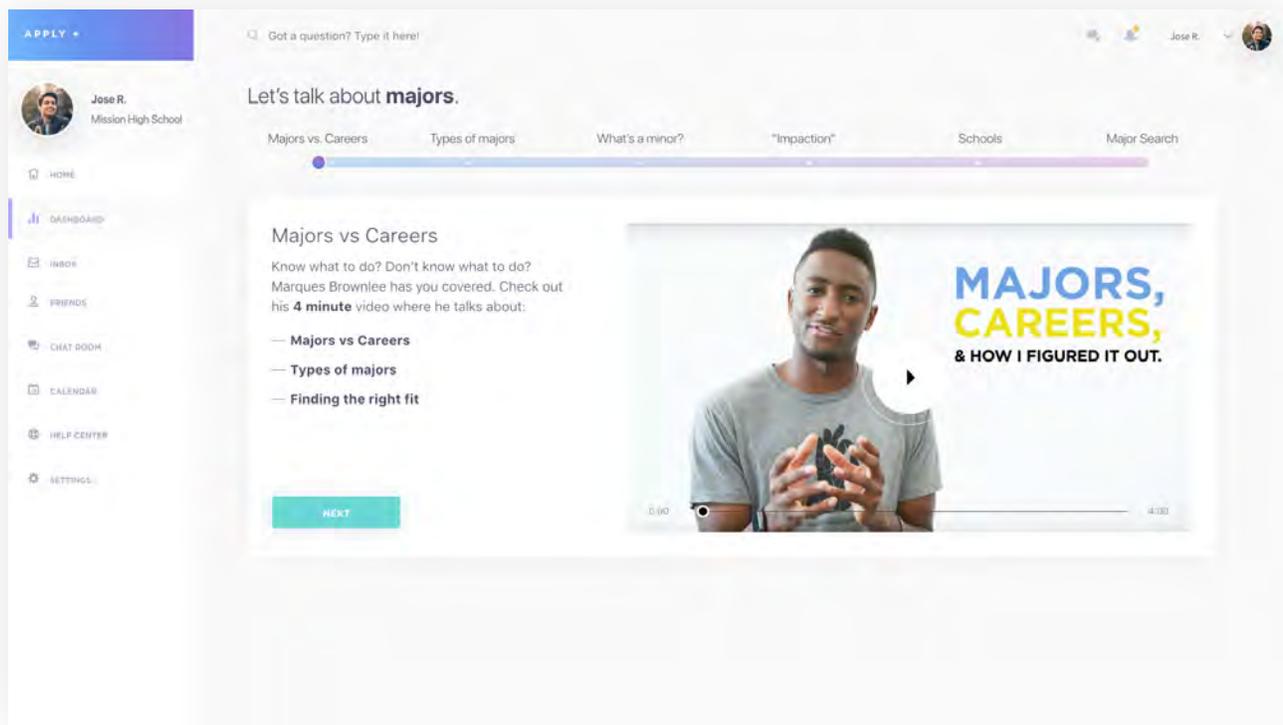
Dashboard - Choosing a Major workshop
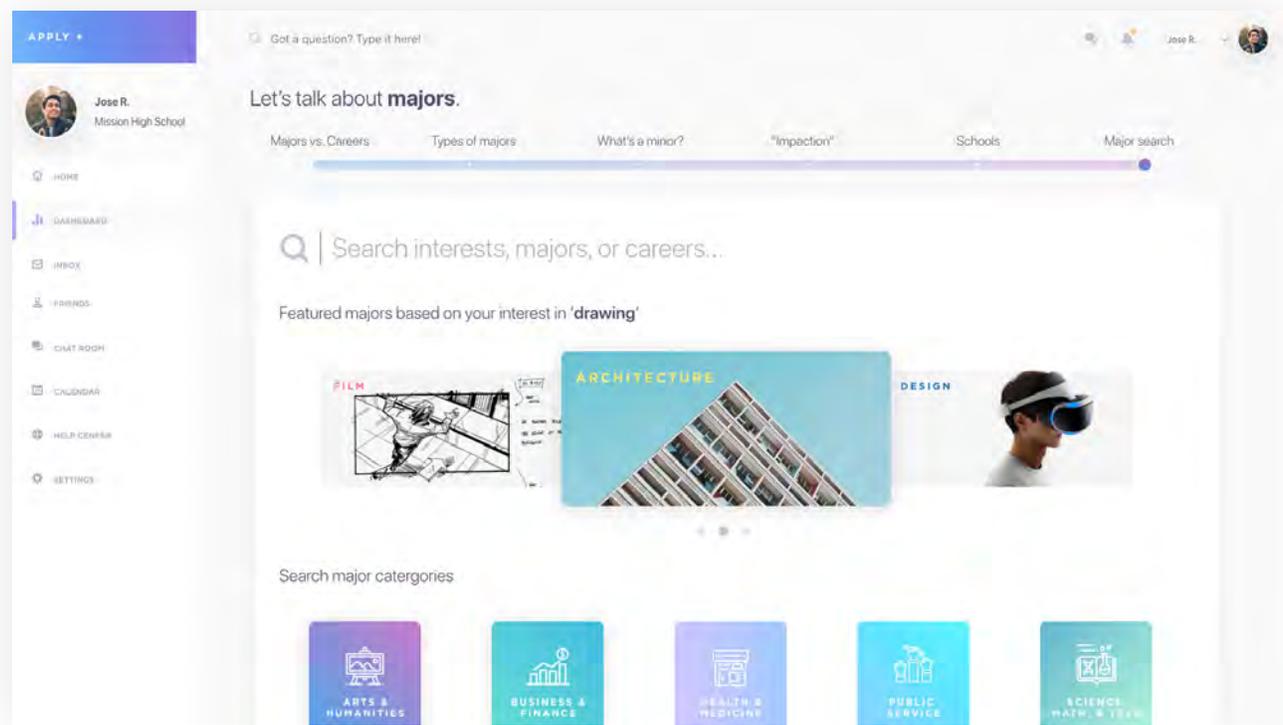
Dashboard - Choosing a Major search

next steps.

MORE THAN JUST COLLEGE

I believe there are better alternatives to college, I want to help students find the right path for them. I want to work with more career options as well because not everyone fits the university and college mold. There are programs that help with careers that range from hospitality and management to UX/UI.

MORE THAN JUST SAN FRANCISCO, CALIFORNIA

I have to admit that a lot of my data and experience stems from work, and my knowlege about the California school system, specifically San Francisco, which has an abundance in resources in terms of help and support, but at the same time missing a lot of students.

MORE THAN JUST A PUBLIC, 4 YEAR UNIVERSITY

I want to add features that will address schools outside of the public university system, and intergrate applications from applications such as Common App and CSS profile.

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shift belt

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ABSTRACT

This research-based project aims to define the benefits of long-term resistance training and provide a convenient solution that mitigates some of the barriers aging adults face when incorporating more exercise into their daily lives. Shift Belt is a wearable, adjustable weighted belt designed for incorporating resistance training into everyday activities with convenience and ease.

Key Words: resistance training, aging adult, aging-in-place, Activities of Daily Living, seniors, exercise, health, fitness.

01

INTRODUCTION

—

According to U.S. Census Report, it is estimated that 20% of the American population will be 65 and older by 2030 (Ortman et al, 2014). At this very moment, society is at the threshold of a population shift. Although life expectancy has been extended, quality of life during those extra years are challenged due to chronic illnesses, frailty, and lack of independence. Chronic diseases still plague the terminal years of the population as many are diagnosed with heart disease, stroke, cancer, diabetes and more. These chronic diseases often leave the user in increasing debility that takes form in states of low mobility, incontinence (inability to control urination or defecation), and/or crippling of the senses (sight, smell, touch, hearing, taste). Many of these variables can be characterized on a single scale of frailty of a user.

Frailty is defined as "a dynamic state affecting an individual who experience losses in one or more domains of human functioning (physical, psychological, social) which increases the risk of adverse outcomes, and is influenced by many variables" (Gobbens et al, 2010). Besides chronic diseases many users may face, all aging adults experience

universal muscle fiber atrophy and bone density loss which can induce frailty. Being in a state of frailty increases risk of falls, hospitalization, long-term care admission, and mortality also rendering the user with increased morbidity (Fried et. al, 2001). Alternatively, these users can control loss rate of muscle and bone strength through an increase in physical activity level and exercise. Specifically, resistance training alone has shown the most potential to improve overall comprehensive health with an aging adult.

Multiple research studies have shown that persistent resistance training is a primary way of compressing the state of mobility and extending quality of life for all aging users (Heath, 2016; Spirduso et. al, 1995; Graber et. al, 2014;

Alvarez et. al, 2015; King, 2001; Bennett et. al, 2011; Strawbridge, 2002). Ability to gain strength remains consistent throughout the user's lifespan, regardless of being young or old. Long-term resistance training has the ability to slow muscle fiber atrophy, bone density loss, and improve cardiovascular and respiratory system functions (Heath, 2016).

Health is the foundation of independence. This thesis focuses methods of design thinking to mitigate barriers that aging users have by encouraging opportunities of resistance training into their daily lifestyle. This creative work project will focus on developing resistance training tools or systems that will embody affordable, convenient, enjoyable, secure, intuitive, low-tech solutions.

"Multiple research studies have shown that persistent resistance training is a primary way of compressing the state of mobility and extending quality of life for all aging users."

Statement of Problem

There are few low-tech, intuitive and affordable resistance training prod-ucts which are designed to mitigate barriers for aging adults. Resistance training, however, is crucial to sustain good quality of life in the aging pro-cess because it slows down muscle atrophy which is highly correlated to muscle strength, mobility, and inde-pendence.

Anticipated Sub-Problems

Universal Fit

The design should accommodate all users with various body shapes and sizes. Research will need to be done to understand how the design can adjust and/or alter itself to accommo-date the user's personal preference and comfort.

Varying Resistance Load and Equal Distribution

Aggressive material studies need to be done in order to understand what material makes the weight, how the weight can vary and be distributed throughout the wearable. A system has to be defined to figure out wheth-er the weight is additive or acts as separate entities (i.e. increments of 2.5 lbs. or separate tools with individ-ual varying weights).

Social Aspect

A required aspect of exercise program continuity is the social element of the experience (SOURCE). This product must have a social component within the user experience that may insti-gate opportunities for engagement, inclusiveness, and interaction with multiple users from various age cat-egories.

Positive Feedback

There must be positive associations with the product in order for it to be incorporated as a perceived "every-day" accessory. It has to provide an enjoyable experience for the user through an element of embedded fun.

Significance of the Problem

Popular exercise tools on the market do not cater to the aging population where demands for physical activity is needed the most to extend quality of life and improve overall health. There are many market products that advo-cate for mobile independence for the typical aging user, such as the cane or walker, but not many products give aging users an opportunity to escape from the stigma and negative stereo-types of being a "senior adult". This thesis aims to shift the focus of design thinking in the aging population from tools that solely increase mobility but holistically looking at the needs of the aging user on a fundamental level (physically, mentally, emotionally, and socially) and how improved health can have a positive impact on overall quality of life. By mitigating barriers

of exercise with an aging user, this thesis hopes to define solutions that can instigate beginnings of a more ac-tive lifestyle amongst this population. This can ultimately help in prolong-ing user mobility without the need of mobile tools associated with disabili-ty. This solution will utilize universal design methods which will benefit all ages who have varying level of mobil-ity. However, it will be most beneficial to adults who are transitioning into the older categories of senior adult, young-old, and old-old.

Tools and Methods for Gathering and Analyzing Data

This project will use primarily user-centered design methods includ-ing ethnographic research methods and interviews, user testing, and feedback. These will be incorporated into a design process that includes research, ideation, prototyping and testing. Wherever possible, Universal Design principles will be used to en-sure usability and accessibility to the greatest number of end users, where Universal Design is discussed in Sec-tion 2E, below. There are three stages in which this thesis will be conducted:

**Presentation of Outcomes:
Creative Work**

The outcome of this research based design will be a wearable weight which aging users can put on as an everyday fitness accessory. This added weight will produce low-re-sistance weight training through-out the day that can accumulate in muscle growth over time (similar to ankle-weights). This product will ad-dress and mitigate any barriers ag-ing users might feel regarding issues of security, self-efficacy, and lack of time when exercising. Theoretically, the additional weight will be closer to their center of mass so that balance and safety will not be compromised.

Appropriate distribution, pattern, materiality and placement of weights will allow for the product to take ad-vantage of the highest comfort level. It will have a variable load which the user can control if Although not super strenuous, this newly cultivated re-sistance training experience can give the aging user confidence in knowing that they are pursuing a more active lifestyle and thus encourage them to push themselves to be healthier in small ways. This, in turn, can help them feel stronger in whatever en-vironment they are in. This product will be customizable, easily worn, and should universally accommodate dif-ferent body types and varying levels of mobility.

02

LITERATURE REVIEW

—

Defining age categories. Figure 1. This table define age categories that are descriptors of certain age groups: infant, child, adolescent, young adult, adult, middle-age adult, young-old, old, old-old, and oldest old. This thesis will use three catego-ries, "young-old", "old", and "old-old", to comprise the terms "aging adults", "aging users", and "users" used throughout this thesis.

Understanding frailty. Definition of Frailty. Campbell defines frailty as "a condition or syndrome which results from a multi-system reduction in reserve capacity to the extent that a number of physiological systems are close to, or past, the threshold of symptomatic clinical failure. As a consequence, the frail person is at increased risk of disability and death from minor external stresses" (Campbell, 1997). Increased frailty progressively takes away the user's ability to perform activities of daily living (ADLs) which are necessary to live an independent life.

Clinical frailty scale. Figure 2. This table describes 9 levels of frailty: Level 1 being very fit to Level 9 being terminally ill as defined by Dalhousie University in their geriatric research. This information will assist in defin-ing the targeted user population, identifying user descriptors within the ethnographic research of this paper, persona creation, and story-boarding. (See in "Tools And Meth-ods For Gathering And Analyzing Data" for items described in Phase One and Two below).
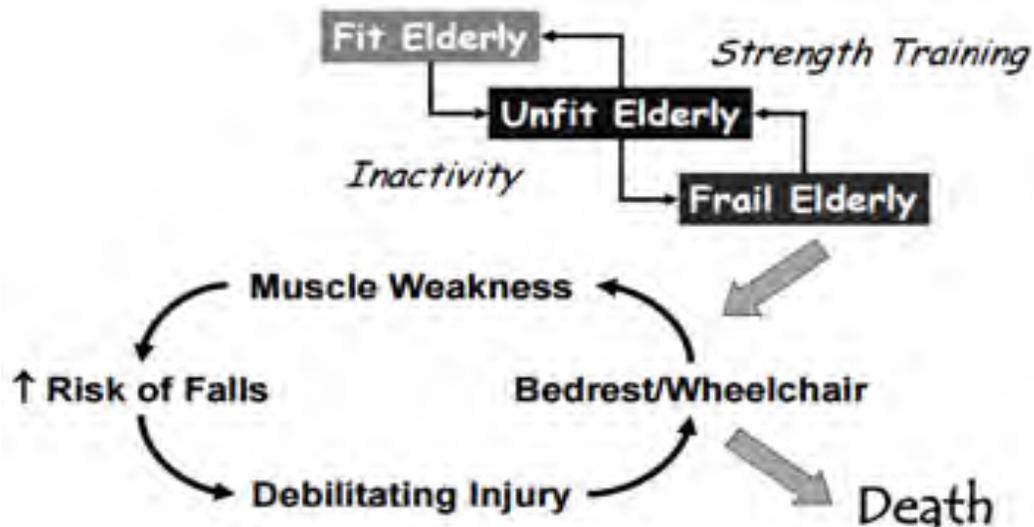
Cyclical nature leading to mortality.
According to Professor Hamel, Chair of Graduate Studies in the SFSU Kinesiology Department, frailty tends to be a continuous cycle of decline entering higher classes of frailty until mortality is reached as shown in figure 3 above. She further points out that with sedentary lifestyle, poor nutrition, hospitalization and/or clinically diagnosed disease, the aging user experiences rate of muscle atrophy that decreases independent mobility putting them at a higher risk of falls (Hamel, 2016). This higher risk of falls leads to a debilitating injury can result in bed rest and dependence on a wheelchair then cycles back at a higher decrease in muscle atrophy. In another study, Schnell points out there is an estimated 14-58% increase of reported 1-year mortality post hip-fracture. Mortality risk increases 4% every year after
(Schnell, 2010).

Universal Changes in the Aging Process and Consequential Diseases

Muscle mass loss and Sarcopenia.
Universal aging (also referred to as "primary aging") aspects show that all aging users will experience muscle mass loss. Spirduso states that fat-free mass declines 15% between age 30 and age 80 and with declined muscle mass, aging users experience an even faster decrease in dynamic strength which dictates amount of user mobility.

Sarcopenia is the term to describe "muscle mass loss due to primary aging" (Spirduso, 1995). This does not include muscle mass lost due to sedentary lifestyle that is known to cause muscle atrophy. Hamel states that sarcopenia does not only affect muscle mass, but also muscle quality, it's fiber characteristics, nervous system, and muscle blood flow which are all relative to the user's strength level. Not all strength is lost equally

amongst the body; lower body strength declines faster than upper body strength. This is detrimental to mobility level because leg extensor power has been shown to be highly correlated with necessary activities of daily living such as "walking speed, chair rising speed, stair-climbing speed, and stair climbing power"
(Hamel, 2016; Spirduso, 1995).

Fortunately, half of typical strength loss is due to true aging but the other half is due to a sedentary lifestyle. With increased physical activity incorporated into the aging process, users can ultimately slow down the rate loss of muscle mass amongst other great benefits that will be explained further in this literature review.

Bone density loss and osteoporosis. Bone density loss is a universal change that affects all aging users. Bone density is built up until the late 20's then declines incrementally thereafter. It is maintained, not gained, throughout the rest of the user's lifetime; bone density maintenance through exercise and diet is very crucial to preventing osteopenia and osteoporosis later on. Enough loss can induce levels of frailty because it can leave the user at risk for very painful fractures due to falls or small injuries (Hamel, 2016; Spirduso, 1995). Those who experience osteoporosis may have increased sedentary lifestyles due to previous falls or fractures which can increase their rate of muscle loss due to physical inactivity thus resulting in declined mobility and independent living.

Many women are subject to osteopenia and osteoporosis as a result of calcium and vitamin D deficiencies in their diet. Menopause also contributes to expedited bone density loss through the later aging process (Hamel, 2016).

Self-Perception in the Aging Process

Negative self-perception.
In Moser's article "Self-Perception of Aging and Vulnerability to Adverse Outcomes at the Age of 65-70 Years", he concludes that negative self-perception in the aging process increases risk for future disability in activities of daily living. Some contributions and factors that contribute to negative self-perception include low-economic class, living along, multiple chronic medical conditions, and depressive feelings. Depression is defined as "lowered mood, loss of capacity to experience pleasure, increased sense of worthlessness, fatigue, and preoccupation with death and suicide" (Moser et. al, 2011).

Positive self-perception.
In the opposite effect, Moser also concludes that positive self-perception improves overall quality of life. Aging users show a boost in "memory performance, more controlled handwriting, faster walking, stronger will to live, and lower cardiovascular response to

Empathy building for all new and existing cohorts in the 20% demographic.

Baby boomers, generation X, and the centennials make up this 20%. By researching individual cohorts, we can start investigating design needs with a mind for an appropriate target user.

> opportunities >

Understand the aging process fundamentally.

Aging will affect every individual. The aging process is very complex and highly individualistic. By understanding it fundamentally, it can enrich the design process and bring a solution to a higher resolve.

We are at a threshold of a population shift.

Preventative measures to ensure longest quality of life.

Because we are at this population shift, what can aging adults do to prevent a state of frailty which seems to inevitably decrease quality of life, independence, and mobility?

slow muscle fiber atrophy

This is linked to Sarcopenia. We lose muscle in our lower legs faster than any other muscle group. **These muscles are linked to chair rising power, stair rising power, stair climbing speed, and walking speed.**

decrease heart disease risk

Four out of five deaths related to disease are related to heart disease. Long-term resistance training and exercise can increase and maintain cardiovascular function.

decrease risk of diabetes

Maintains glucose levels, stress, chance for stroke, and improves blood circulation.

slow bone density loss

Bone density loss is linked to osteopenia and osteoporosis (brittle bones) which can induce bad injury after falls which may be difficult to recover from and increases mortality.

long-term resistance training health benefits

increases ADL abilities

Increasing muscle strength allows for more power to perform activities of daily living (ADL) like: eating, bathing, dressing, toileting, walking, and continence.

maintains independence+ mobility

"Use it or lose it" saying goes here. By working out and stimulating all areas of body function, it preserves mobility and independence linked to aging in place.

more likely to participate in spontaneous physical activity

By doing exercise, especially resistance training, one will be less intimated and uncomfortable about accepting invitations to participate in physical activities asked by family or friends.

enhances self-esteem

Exercise has been linked to boosting self-esteem, self-perception, and decreases risk of subsequent depression in aging adults.

stress". Physical activity reduces the risk of subsequent depression in aging adults which overall increases self-perception (Moser et. al, 2011).

Benefits of Physical Activity

As stated in the beginning of this literature review, benefits of exercise can increase muscle mass which can slow the rate of muscle atrophy due to natural aging, decrease rate of bone density loss which has been linked to osteoporosis, hospitalization, and frailty, and improve emotional health by increasing positive self-perception.

Resistance training improves overall health in all aging adults.

Seguin's research proves that strength training produces multiple necessary benefits to aging adults quality of life. It has shown improvements in strength gain, bone and joint health, strength and functional performance, emotional health and sleep, and glycemic control in type-2 diabetic adults which all relates to increased years of health and independence (Seguin, 2003). Other effects of resistance training, as described by Hunter (2004), includes "increases power, reduces the difficulty of performing daily tasks, enhances energy expenditure and body composition, and promotes participation in spontaneous physical activity" (Hunter, 2004).

Barriers to Physical Activity Reasons for fear, apathy, and reluctance.

Aging adults who live sedentary lifestyles hesitate to start exercising for multiple reasons. Walther (2015) lists these reasons as "fear of self-efficacy, lacking inertia, experiencing depression and anxiety, being self-conscious, going through health problems, lack of time or knowledge, and lack the support system needed to make a change."

Six barriers. The International Council of Active Aging (ICAA) published a study on the U.S. Department of Health and Human Services (2011) website outlining the six primary barriers to physical activity for aging adults. The first barrier, lack of interest, is the number one inhibiter that is keeping aging adults from exercising. There has to be a payout and exercise alone does not bring immediate gratification. There has to be incentive, similar to winning in sports, that drives the user to enjoy, be social and have an interest in the physical activity. This can be mitigated by asking the individual user what they enjoy doing. The second barrier that aging adults reported is experiencing shortness of breath during physical activity. Shortness of breath can make the user feel very uncomfortable and this strong discomfort can translate into a deterrent of physical activity engagement. The third barrier reported is experiencing joint pain during physical activity.

(research) **six barriers to exercising**

Research has shown many benefits to long-term resistance training, but why do aging adults hesitate to include it in their schedule? These barriers help build empathy towards what could be a successful design.

lack of interest

There is lack of incentive, or "payout", to exercising. Most exercising work outs do not engage the user socially or pique interests.

misconception of fitness

The misconception could be that exercise comes through intense intervals of training and that small bouts of physical activity doesn't have an impact on overall health.

shortness of breath

Shortness of breath can make the user feel very uncomfortable and this strong discomfort can translate into a deterrent of physical activity engagement.

low energy levels

Reported low energy levels is speculated to be a result of taking multiple medications.

joint pain

The fear of injury and uncomfortable level of pain may mitigate a lot of users from including exercise in their daily activities.

doubts that it can lengthen life

Aging adults reported skepticism about the potential benefits of long-term health that exercise brings.

- An aging adults study as reported on U.S. Department of Health and Human Services -

The fear of injury and uncomfortable level of pain may mitigate a lot of users from including exercise in their daily activities. However, moderate exercise can actually reduce "joint pain and stiffness, build strong muscle around the joints, and increase flexibility and endurance" (ICAA, 2011). The fourth barrier reports that there could be a prevalent misconception of fitness (or lack there-of). The misconception could be that exercise comes through intense intervals of training and that small bouts of physical activity doesn't have an impact on overall health. However, fitness is accumulative. Especially in an older age, easy to moderate walks or light resistance training is accounted for physical activity as much as running or swimming is. Through building up strength and routine, aging users have great potential to increase health and even reverse some of the effects of aging. The fifth barrier reported from aging adults is low energy levels which could be a result of medications. The sixth and last barrier is the doubts that come with the ability of exercise to actually lengthen life (ICAA, 2011).

Aspects that Engage Adults to Start Exercising and Keep Exercising

Motivators. Current active aging users had initial motivators to help them increase their physical activity. Walther (2015) lists these motivators as: "the desire to improve quality of life, desire to improve appearance, physical

recommendation and support only when they are specific, prospects of positive health outcomes, reduced barriers, and increased self-efficacy" (Walther, 2015).

Feature preference. Aging adults will be more inclined to participate in physical activity if the tool or method exhibits certain features that remove current barriers of limitations of the exercise.

In King's survey among active aging adults (2001), these preferred features include:
"moderate intensity, safety, simple schedule, convenient location, social component (as preferred by women), non-competitive environment, low cost, no class environment (if BMI is greater than 27), and walking as the activity (shown across different ethnicities)" (King, 2001).

Program continuity influencers. Now, with motivators and feature preference in place, the tool or method for the physical activity has to prove continuity and repetition within the user's lifestyle to sustain and increase health. Certain aspects of the design, as recorded by active aging adults, help keep the user continually engaging in it. These features have to include an aspect of: "social support, senior-specific activities, a sense of enjoyment, transportation, and form of an established routine" (Walther, 2015).

Quality of Life and Aging-in-Place

Quality of life. There are multiple definitions that apply to quality of life. Some research shows that quality of life could be seen separately as a health related term alone, but in this thesis quality of life will be seen as a comprehensive term that is described as "a multidimensional construct that addresses physical state, social functioning, and emotional well-being" as defined by Drewnowski (2001).

Objectification of assisted living facilities. Shawn Laird, 25+ practicing Registered Nurse and Nurse Practitioner, summarizes the downfalls that patrons face in an assisted living facility. She believes that assisted living facilities are not the best environment for rehabilitation and strengthening mobility or even a place that creates opportunities increase quality of life. The transition from the home to a facility can instigate feelings of depression, isolation, and lowered capacity of feeling joy or happiness. With increased negative self-perception, the aging user will be less inclined to exercise in an uncomfortable environment. During the transition they have to downsize personal belongings, downsize personal space, understand their place as a patron within a healthcare business model, congregate with other elderly, be exposed to mortality in their surroundings, increased risk for age-related depression and deal with feelings of marginalization and social exclusion because there are limited opportunities to associate with other age cohorts. This environment presents added barriers to independently exercise because a majority of independence is taken away. (Laird, 2016)

Importance of aging in place. Aging in place is a movement which believes that living in one's own personal home, separate from an assisted living facility, long-term hospital, or nursing home, extends quality of life, autonomy, happiness, and independence. Social connections and familiarity in an environment are two fundamental aspects of aging in place which is shown to increase quality of life and independence. As Wiles (2011) states, "home is a refuge, but it is as much the background of the home, the familiarity with the places and contacts around it that provide security as any emotional attachment to the home itself

Universal Design Methodologies HCD Toolkit. Human-Centered Design toolkit are methodologies which place the user as the focal point of design. These design solutions are brought through three different phases: hear, create, and deliver. The "Hear" phase employs different research strategies such as user interviews, user observations, secondary research, and case studies.

The "create" portion is the ideation phase where quantity of design solutions are generated and iterated until an idea is refined. "Deliver" is the final phase in which the final product is produced as a culmination of the design and research process (IDEO, 2015).

7 principles of universal design.

- **Principle 1:** equitable use. The design is useful and marketable to people with diverse abilities.

- **Principle 2:** flexibility in use. The design accommodates a wide range of individual preferences and abilities.

- **Principle 3:** simple and intuitive use. Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

- **Principle 4:** perceptible information. The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

- **Principle 5:** tolerance for error. The design minimizes hazards and the adverse consequences of accidental or unintended actions.

- **Principle 6:** low physical effort. The design can be used efficiently and comfortably and with a minimum of fatigue.

- **Principle 7:** size and space for approach and use. Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility."
(National Disability Authority, 2005)

03

DESIGN RESEARCH

—

The design research includes a variety of methods to acquire data, gain empathy and define design parameters. These include conducting interviews, market research, benchmarking and finding design opportunities to define parameters.

INTERVIEWS

A SAMPLE OF INTERVIEWEES

RAMON BRUSUELAS
94 years old
Independent Living

DR. JUNE FISHER
83 years old
Independent Living // Slight Assisted Living

GING FULGENCIO
84 years old
Assisted Living Facility // Outpatient Clinic

SHAWN LAIRD
Nurse Practitioner
25+ years in Industry

YOLY MARQUEZ
Director of Nursing
25+ years in Industry

JANINE CHAVEZ
Lead Certified Nursing Assistant (CNA)
7+ years in Industry

I interviewed many industry professionals and end users. This included nurse practitioners, occupational therapists, physical therapists, gerontologists, academic professionals, middle-age users and young-old users.

I traveled to various sites to conduct interviews. I had interviewees with a few members of SFSU's 60+ club, medical staff at Reo Vista Healthcare Facility, and academic faculty within SFSU's kinesiology department.

I designed a script and provided a list of questions for the interviewees:

Script: "Hello, I am conducting research for my wearable weight product. It is a similar concept to the ankle weight but will sit like a belt, similar to a back support wrap. This product is to help augment daily life with resistance training that aging adults need to maintain mobility and independence. Your feedback regarding the ease-of-use of the product would help me design the best user-experience for the product. There will be no weights in the testing of the belt. Looking forward to your response. Thank you."

USER QUESTIONAIRE

•How do you define exercise?

•Do you have an exercise routine? If so, what is it?

•What are your thoughts on wearable weights such as ankle weights?

•What is your preferred method of exercise?

•What does your day-to-day routine look like?

•How often do you cook or clean around the house?

•What motivates you to keep up with a new habit?

•Have you lifted any weights in the past? I.E. small hand weights from an exercise class, personal exercise routine, or heavy weights?

•How do would you grade your current mobility? 1 – Immobile, very difficult to walk; 10 – very strong gait, independent.

•Do you fear injury or getting hurt?

•Are you very cautious about putting yourself in a new situation that requires physical effort?

•What are barriers keeping you from resistance training?

•What makes you feel strong in the environment you're in?
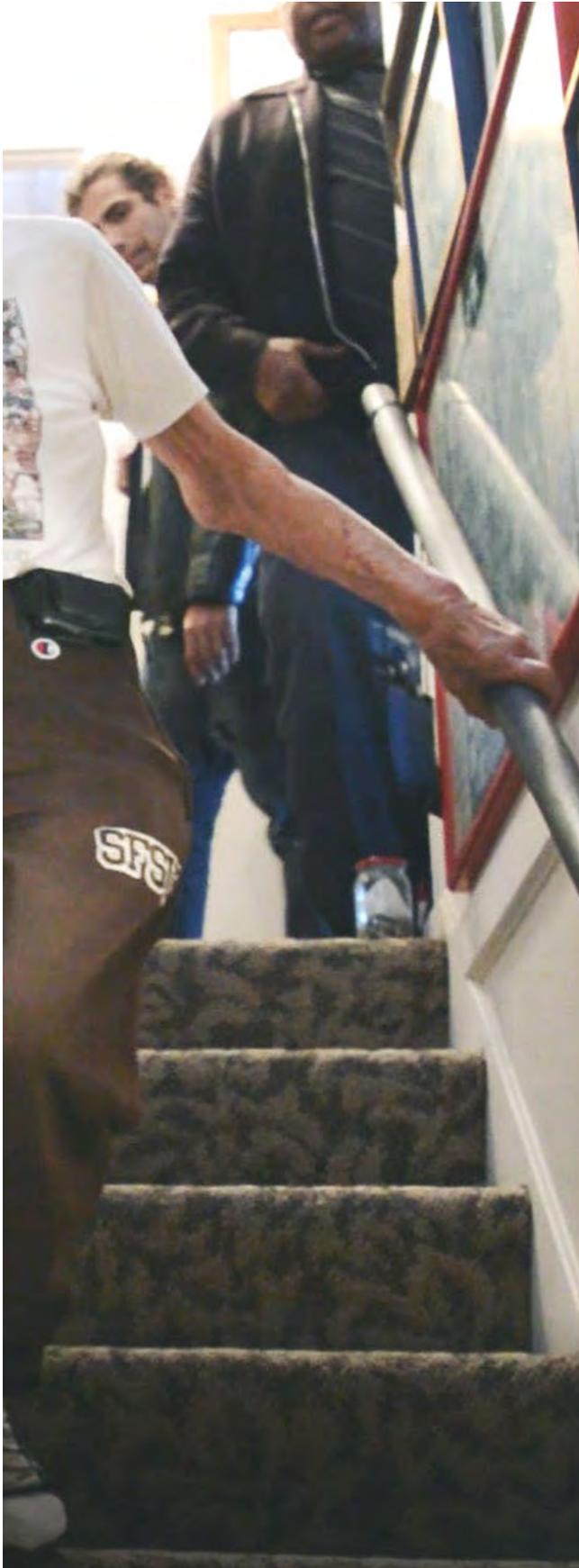
REFLECTION

—

Across multiple interviews with aging users, there was a fear implied with regaining the ability to do the activities that they used to enjoy. Exercise, however, has the ability to increase functional mobility and independence within aging in place. How can design mitigate the insecurities with exercise and allow the aging user to feel strong in their home environment?
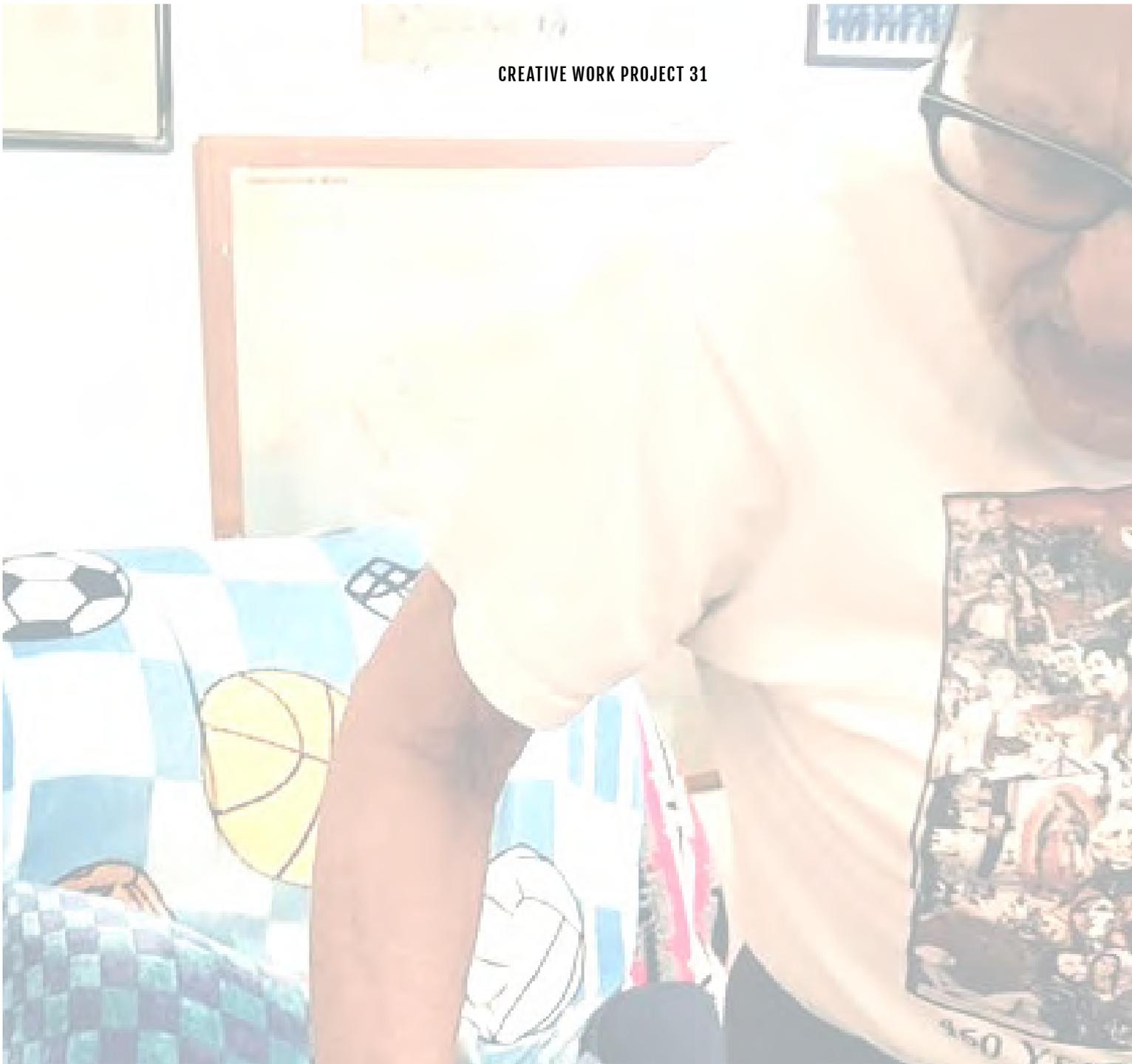
"I use to be able to do things but I can't anymore after my surgeries.. I got everything replaced. Had a lot done on me... I can't do that no more [activities] it's gone. You adapt to what you can't do...I'm scared of falling I can't go out by myself. You modify, you listen to your body...

...I want to feel strong in the environment I'm in."

(Ramon B, 94 years, End User)

BENCHMARKING

—

On the left I list existing products and what Shift should be inspired to take away from. Two main domains that directly influence the Shift Belt system is powerlifting belts and diving belts.

Powerlifting belts are thick leather belts that help keep the athlete from putting too much strain on the lumbar while performing the lift. The belt's thickness and adjustable tightnes s helps the lifter to keep their core strong and their back tight while working out.

Diving belts use a system which inspired the Shift Belt. Diving belts use a thick nylon belt which can have a variety of diving weights weaved into the system to help the diver sink in the water.

crocs

Personalization, comfort, and affordability of Crocs has made it a successful product that is enjoyed universally by all age groups.

construction safety wear

Reflection and contrast of materials create user awareness in their environment which can prevent accidents from occuring.

fishing vests

Fishing vests are made to be breathable and extremely functional. They are made to hold different fishing mechanisms.

weighted vests for autism

Weighted vest for autistic wear is designed to be integrated into everyday clothing. This provides a constant stimulation that the child may need without visibly showing it.

patagonia

Columbia is a well-made brand that focuses on function, quality and affordability. It's minimal aesthetic lends to a diverse user group.

velcro fasteners

Velcro is often seen in senior clothing as an easy mechanism to fasten and take off. It is a feature that lends itself to those who have limited fine motor skills.

scuba pocket weight

Scuba divers use these variable weight sand bags to help them sink or train underwater. They slide them into belted pockets around their waist.

fitbit

Fitbit offers a wide variety of features that offer measures of exercise through a minimally aesthetic interface.
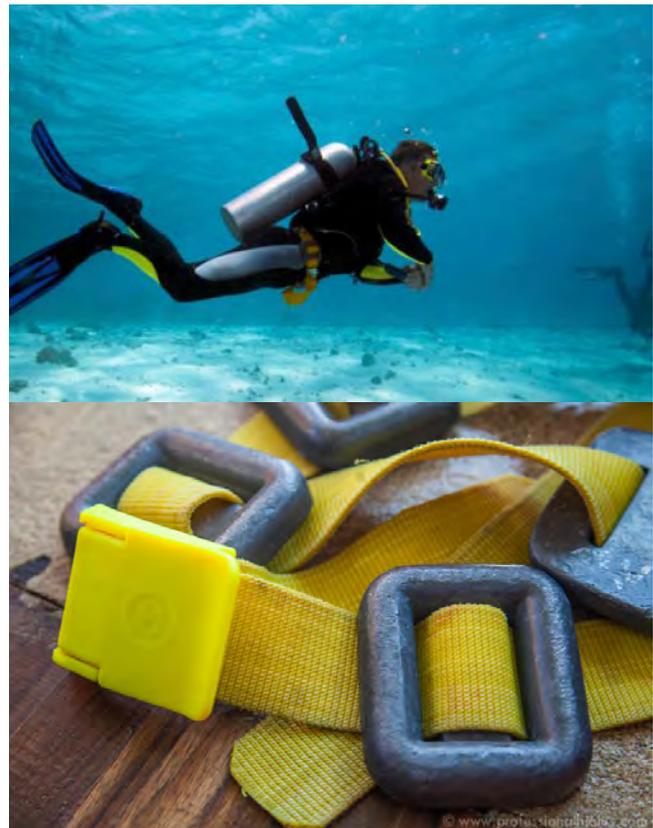
EXISTING MARKET STUDY

—

Existing products on the market for aging adults have a strong stigma attached to them that unfortunately highlights the relationship of being "weak & disabled" to the elderly. Alternatively, there are no existing market products for resistance training that aims to target the aging population as seen on the right. These products either challenge balance, joints, appropriateness and friendliness within the user experience.

Fitness and health should not discriminate based on age. There should be tools on the market that will include, associate, and empower the aging adult especially since health is the foundation to independence, mobility and autonomy in the later years of life.

pneumatic resistance

pros: Safe, variable weight.

cons: Expensive, restricted mostly to gyms.

ankle weights

pros: Cheap, convenient, can wear through daily activites.

cons: High impact on arthritic prone joints, center of mass compromised.

resistance bands

pros: Cheap, convenient, variable resistance.

cons: Restricted to workout routine, balance can be compromised.

weighted gloves

pros: Cheap, convenient, variable resistance.

cons: High impact on arthritic prone joints, not a convenient wearable.
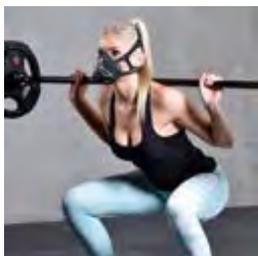
oxygen mask

pros: Cheap, provide supplement to workout.

cons: Cause shortness of breath, only designed for specific fit demographic.

weighted vest

pros: Cheap, convenient, can wear through daily activites.

cons: Low aesthetic, weight location can induce neck and back strain.

resistance tubes

pros: Cheap, convenient, variable resistance.

cons: Restricted to workout routine, balance can be compromised.

speed parachute

pros: Cheap, provide supplement high intensity workout.

cons: Requires sprints to be activated.

OPPORTUNITIES FOR SHIFT

—

There are many opportunities for the Shift Belt system because of the level of convenience it adds to the resistance training experience. Now a user's daily routine and home environment can be augmented with resistance training. When worn, the user can simulate different movements that are done with pneumatic resistance machines at the gym without the stigma or discomfort.

The added convenience is also in the fact that the user does not have to set aside extra time to go to the gym if their schedule is busy. This wearable weight allows the user to engage their body through resistance training just by doing daily activities such as cleaning the house, running errands, shopping or climbing up stairs.

→

walking

→

climbing up/down stairs

→

body level changes

cooking

cleaning

shopping
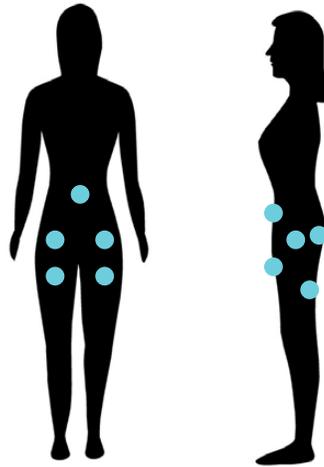
ADVANTAGES OF WAIST PLACEMENT

—

The advantages of the Shift Belt's placement on the waist is that it engages the user's muscles in the core, hips, rear, hamstrings and quads which are essential for maintaining autonomony throughout the aging process. These muscles are necessary to perform ADLs and IADLs. They support core strength and leg extensor power are also directly related to walking speed, chair rising speed, stair-climbing speed and stair climbing power.

Core

Hips

Glutes

Hamstrings
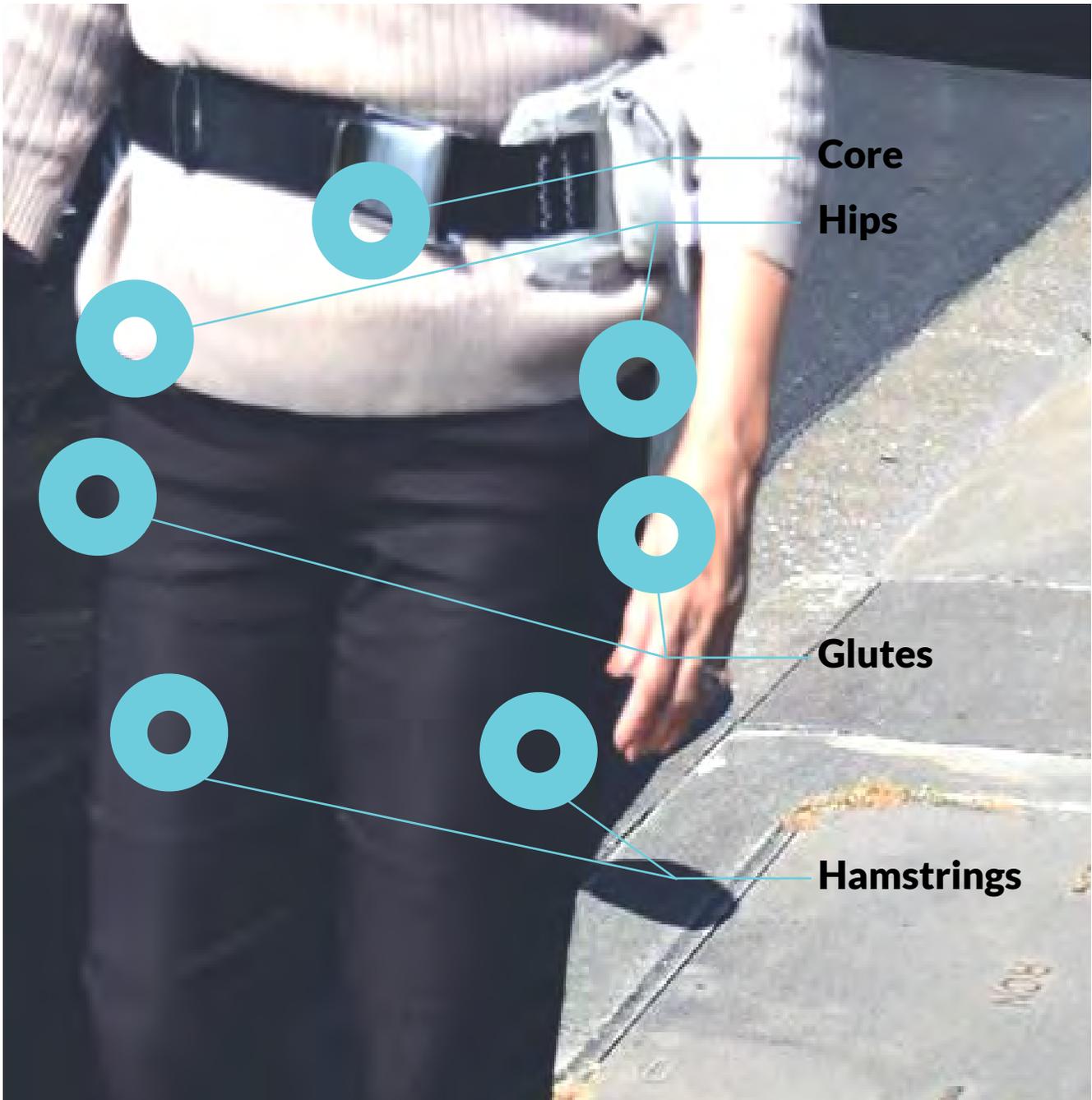
BALANCE

—

A user's balance depends on the body's center of gravity relative to the base of support created by our feet. A user's ability to balance is tested when the user has the dynamic ability to shift and adjust their feet after moving their center of gravity out of the line of the base of support. Ankle weights and weighted gloves not only put stress on joints, but has the ability to compromise an aging user's balance in various positions. Wearable weights closer to the center of gravity allows for resistance without compromising joints in the ankles or hands. Thus, wearable weights around our hips, shoulders or mid section would serve the biggest opportunity without compromising balance.

base of support
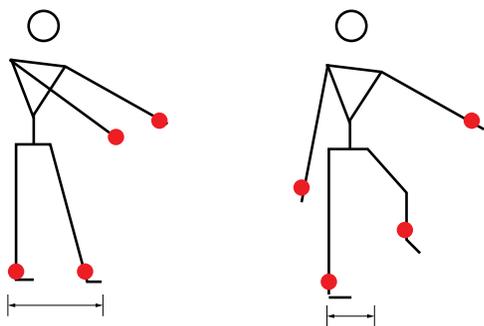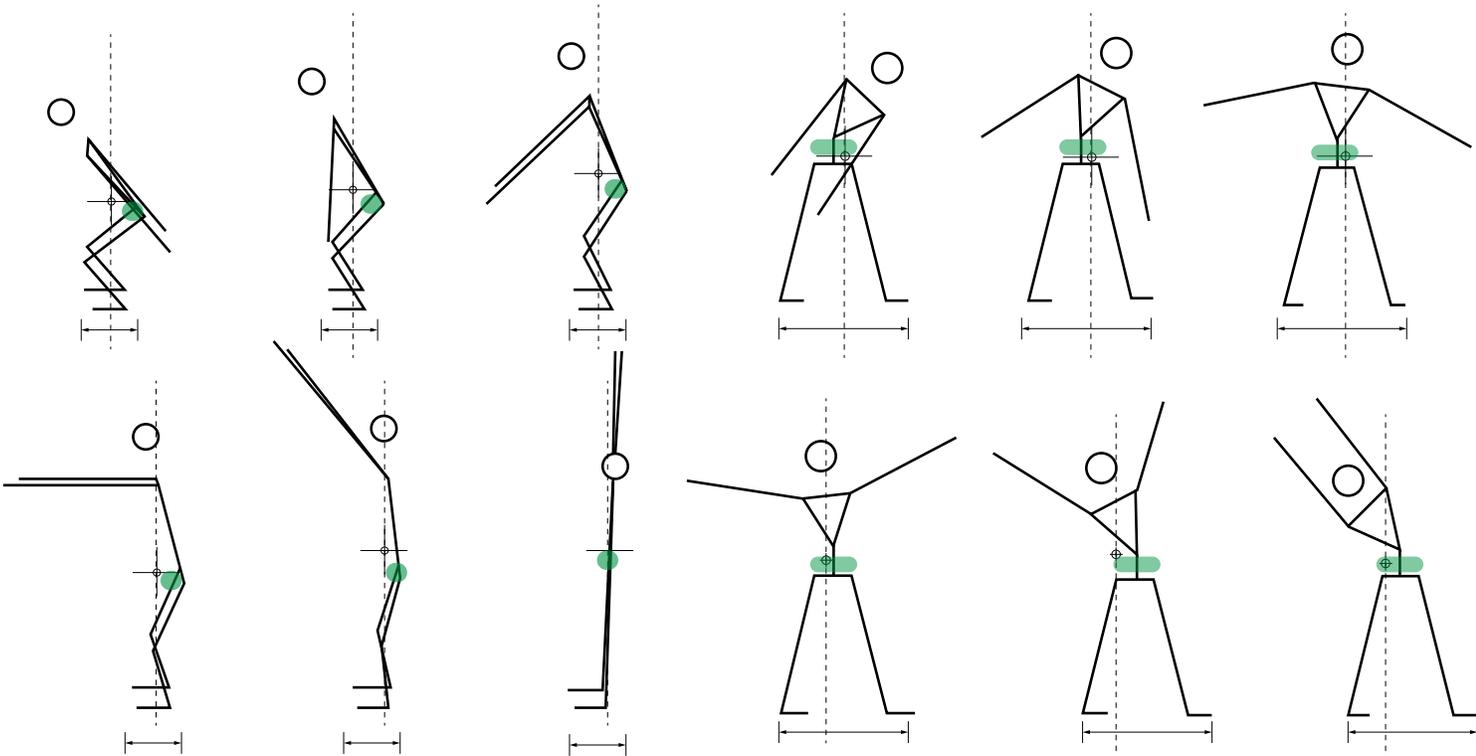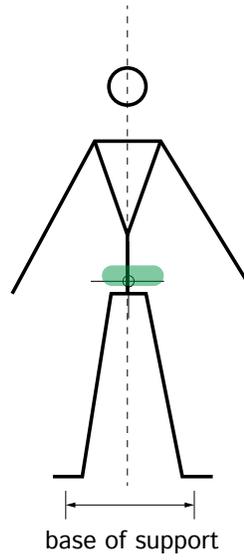
HAND WEIGHT IDEATION

——

The inception of the hand weight was inspired by dive weights which are shown as netted bags with steel balls. To add more ergonomic to the hand weight, I designed a hard shell case that could be easily grasped with fingers through the top or the sides.

The ideation in individual weights came through multiple feedbacks from end users saying that the weights should be fabric in case that it gets dropped on the foot. Thus turning my original concept of a hard-shelled case to a hard top and soft bottom weight.

In further iteration, a nylon woven belt was easier to hold on the top rather than the hard-shelled grip.
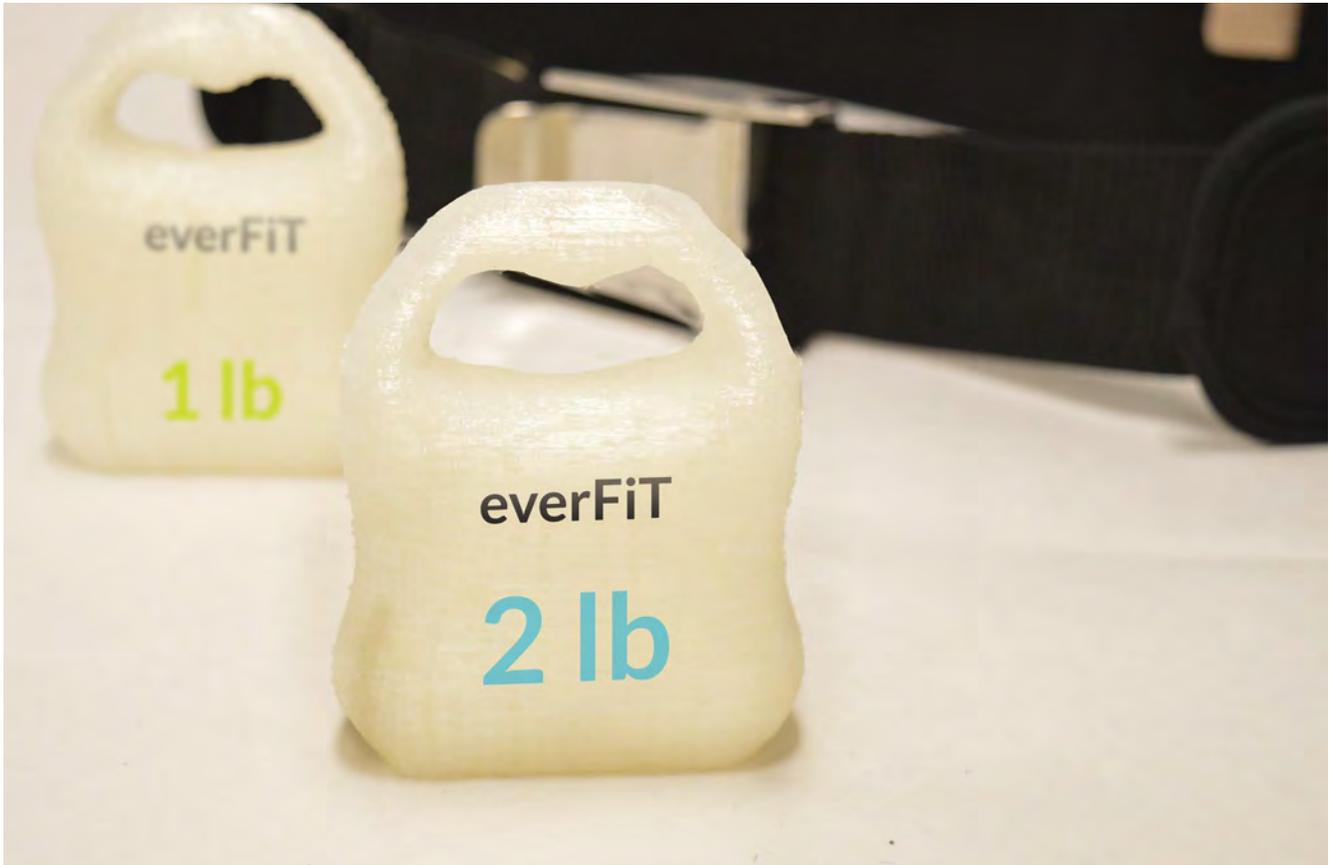
03

/ adding color, material
& finishes
/ soft bottom for safety
if dropped
/ soft-tactile for
pleasant feedback as a
weight

04

/ final model
/ belt loop for easier
handling

BELT IDEATION

——

The belt ideation went through three different phases. First being a neoprene belt that allowed for the netted dive bags to be clipped at the top. Once I designed the hard-shell hand weight with a clip back, I wove a nylon belt through the neoprene to allow for movability of the individual weights. Once the hand-weight became a soft bottom, the belt naturally became pouch to easily slip and secure the weights in. The white nylon that is sewn across each pocket in the third iteration allows for use-of-ease while opening the pouch for those who suffer from limited dexterity of their fingers.

03

02

01

/ lighter colors /
belt handle
/ nylon belt
/ pockets
/ wider belt

/ slide weights into
belt / velcro
enclosures

/ neoprene back
support

90

BRAND IDEATION

—

    The brand went through two simple iterations. EverFIT gave weak brand identity although it had a strong meaning. Shift Belt has a stronger graphic identity; the "i" can be made into an icon because it represents two things: a person walking and the lower half represents the shape of a belt. I went with the bottom left logo that spells out belt because it added to the clarity of the brand representation.

PROCESS DOCUMENTATION

The process of making the final prototype included 3D modeling the top part of the weight in Rhino then 3D printing it on an SLA printer. Once the tops were printed, they were sanded and painted to give a finish.

The soft bottom and belts were designed through a series of templates that were used to cut the fabric and sew it into the shape that I wanted. I sewed the bottom of the hand weights, filled it with toy stuffing and weighted beads then glued it to the 3D printed handle. The weight pouches were then sewn individually and then attached to the belt.

05

FINAL DESIGN

The Shift Belt is a wearable, weight variant belt that sits closest to the user's center of gravity (at the core of the stomach/pelvic region) which reduces risk of losing balance, injury, and unnatural stress on smaller joints and muscles. The system includes a wide neoprene band that acts as additional back support, a set of custom individual weights (ranging from 1lb - 4lb) that are slid and clipped into a support band around the waist, and a universally friendly belt fastener.

The innovation of Shift is seen through the convenience of enhancing everyday activities into resistance training workouts. Instrumental activities of daily living are great for EverFIT to engage the user's body; routines of walking upstairs, housework, shopping, or cooking can serve as opportunities to gain strength. It is an approachable way to work out and empowers the user, regardless of age or environment they are in, to believe that they have the capability of improving health/ability.

SHIFT BELT SYSTEM

———

The Shift Belt system is very straightforward. It acts as similar to a multi-pocket fanny pack that includes durable pouches to hold the weights. Thickly stitched, this heavy duty belt provides added back support as well as very friendly closures for putting the belt on and slipping the weights in.

Easy Pouches

Embroidered Stitch

Velcro Enclosures

Dive Belt Buckle

Nylon Waist Belt

Nylon Belt Pouch Handle

BELT MATERIALS

The final prototype consists of utility fabric, vecro fastenings, different sized nylon belts and a heavy duty clamp belt buckle. The palette stayed neutral due to the emphasis on the weights themselves.

WEIGHT VARIATION

—

The individual weights act as the weight variable for the belt system. The plastic handle color identifies the load of the individual weight. Black signifies 1 lb, orange signifies 2 lb, and red signifies 4 lb. They could be mixed and matched to vary the load on the user up to 12 lb. In future prototypes, I would like to increase the individual weights to 6 lb at the maximum.

1lb

1lb

1lb

1lb

WEIGHT MATERIALS

—

Materials

Acrylic Paint Topcoat Finish

High Density PolyEthylene (HDPE) Plastic

Utility Fabric

Cotton Stuffing

Steel Balls

STORAGE

The small resistance training system is conveniently compact for easy storage needs. It has the benefit of a pneumatic resistance machine without the bulk. The individual shift weights are very easy to store. It can be left sitting on a work surface, hung on a wall or neatly tucked away in a drawer or cubby.

HOW-TO GUIDE

Shift belt is very easy to put on. The end of the belt is fed through the belt buckle then clamped shut. Consequentially, add the following weights, close the pouch and shift the belt back into a comfortable position. It's broken down into 6 easy steps which allows for a simple and intuitive user experience.

x 4 times

IN-USE ENVIRONMENT
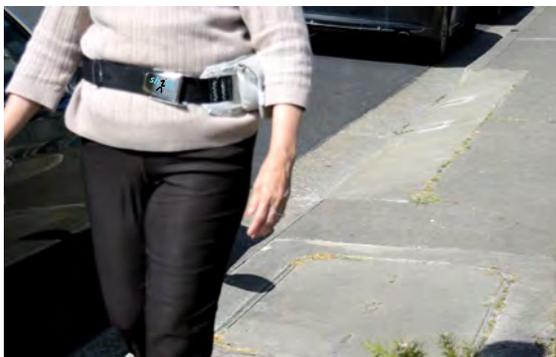
BEST PRACTICES

—

These are a set of very general guidelines to follow when first using the Shift Belt. It is important for the user to start out from the beginner and adjust their difficulty level once they are use to the system.

beginner
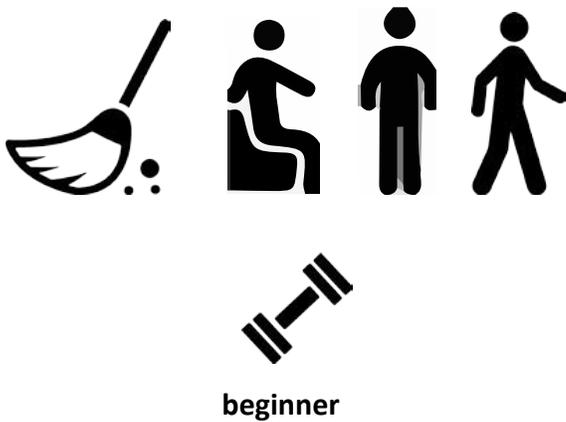
incorporate very light weights into daily activities

leisurely walks, house-cleaning and running errands or chores

incorporate more level changes (sitting > standing) and opt for stairs

intermediate
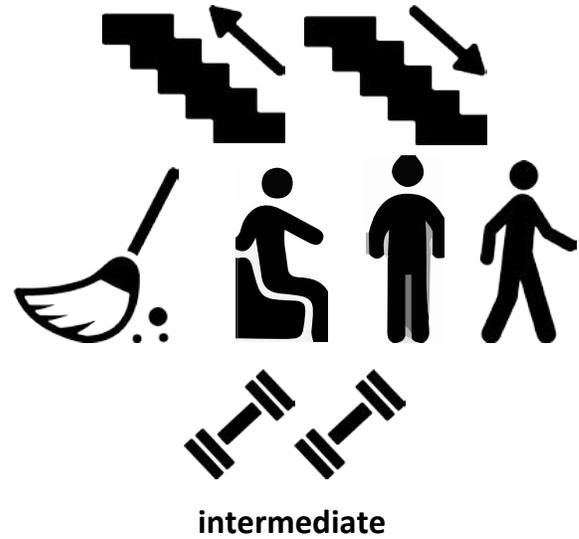
incorporate higher weights into daily activities

brisk walks, increase daily steps and repeatedly walk up and down stairs

advanced

incorporate largest weights (4lb+) into daily activities

designated fitness routine i.e. squats, jumps, jogging, and speed-walking

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MOVING FORWARD WITH SHIFT

—

- Shift would pursue more user testing alongside physical therapists to determine a specific "best practices" guide.

- The prototype will be further refined into a more compact belt that could be easily worn under outerwear.

- Shift Belt will be designed for various sizes incorporating small, medium, large and extra-large.

- Various color styles and fabrics to suit a variety of consumers.

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Walkane: Updated User Journey + Interview + Prototype
A cane which splits into two for better support

Written by [Barkha](#) Sisodia, OpenIDEO.org

Updated on 23:33, May 26, 2017

Barkha Sisodia is a User-experience + product designer with experience in user-centered design and methods from formal training as well as from an industrial design background. Barkha believes in the iterative process of elimination through research, design and user testing, to achieve a holistic and empathetic user experience. She strongly believes that her purpose as a designer is to make peoples life simpler by designing a stress-free experience to make them feel accomplished in their task. She has applied this methodology at Ingram Micro, smart home stealth start-up, including her Aging Mobility Assist, Walkane device and her TRAC projects (eco-system of healthcare products). Barkha received her M.A. in Design from the SFSU School of Design in May 2017.

Who is your idea designed for and how does it enable older adults to live their best possible life by preventing falls?

My idea enables older adults to walk around the house and outside without a fear of falling. It has a special prong and grip feature that most likely will prevent falls even while getting in and out of a sitting position. It is stylish, design language is to promote aging adults to carry it around without being em-barrassed by the fact that they are carrying a walk-ing stick. Walkane is also designed keeping in mind today's generation that will age eventually.

Aging adults mostly start using support devices like canes, poles, walkers etc. after a fall has occurred. My idea and design is to prevent a fall by encouraging adults to have Walkane around them as they phys-ically began to age. I have constantly been in touch with people for feedback in terms of form and design to understand the interest in use even before a fall happens.

The circular handle design makes it easier for people with joint pain to use Walkane as it equally divides the pressure along the cane. I have added col-lapsible prongs to Walkane, which is a combination of two canes fixed together to be used as one or opened to be used as one in each hand for better back and body support. My attached presentation is meant to explain its features in detail.

What early, lightweight experiment might you try out in your own community to find out if the idea will meet your expectations?

I will 3D print or CNC the parts to get a better under-standing of the form, support, and functionality.

What skills, input, or guidance from the OpenIDEO community would be most helpful in building out or refining your idea?

Focusing on the most important features and mini-malizing the concept to promote ease of use and to make accessible for future aging adults will be the guidance I need. More the merrier!

How long has your idea existed?

4 months - 1 year

This idea emerged from

An Individual

Attachment - Side legs
WALKANE

When opened, provides with stronger and wider support in compact mode

The additional prongs can be easily installed and are designed to fold in a manner such that they fit into the existing prongs

Can be used in multiple ways

WALKANE . Barkha Sisodia . San Francisco State University . Stanford Longevity Design Challenge

Tell us about your work experience:

I am learner at heart, I am currently doing my masters in design at San Francisco State University, as well as teaching a class. My background is in furniture and interior design, curiosity to understand people and their relation to space and objects is the reason I love what I do.

How would you describe this idea while in an elevator with someone?

It would be amazing to have a well-designed, good looking cane which is easy hold and handle as well as can expand into two canes when there is a need for more support. Walkane is exactly designed to do that, plus the special handle design helps to not put too much pressure on the hand grip. Walkane is friendly to use by the older adults and not look like an equip-ment for the handicapped.

How does your idea demonstrate our Criteria of Affordability?

Walkane could possibly eliminate the need for extra canes and poles that older adults use today at different times of the day for various tasks. Keeping that in mind, Walkane could prove to be a smart and an affordable choice.

How does your idea demonstrate or plan to demonstrate scalability?

Dr. June Fisher has been a big supporter of Walkane because of her walking trouble due to a fall. Also, a couple of other older adults that I showed this idea to were very interested to see it build. Knowing that, I think Walkane has the capability to be used by a large number of people. Not only older adults but also people with injuries that need support.

How do you plan to measure the impact of your idea?

I believe user reviews and feedback is good determinate of the impact of my idea. Also, the fact that this could be a one stop solution for a cane which is physically supportive in all areas around the home as well as outside is huge impact towards the fear of falling.

What are your immediate next steps after the challenge?

Find more people to test it out, make more detailed changes as per user reviews. Work on the mechanical aspects of Walkane.

EQUITABLE

FLEXIBLE

INTUITIVE

LOW PHYSICAL EFFORT

PERCEPTABLE

SIZE AND SPACE FOR APPROACH AND USE

TOLLERANCE FOR ERROR
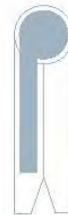
WALKANE

A compact as well as expandable solution to prevent falls around the home environment, by expanding the product to perform various support tasks at different stages of life with the help of simple attachments.

WALKANE . Barkha Sisodia . San Francisco State University . Stanford Longevity Design Challenge

SFSU Student Lamar Pi Wins USC National Design Contest

http://gero.usc.edu/mksummit/udcompetition2016/

Monday, February 06, 2017

LEONARD DAVIS SCHOOL OF GERONTOLOGY
(UNIVERSITY OF SOUTHERN CALIFORNIA)

A desire to make it easier for his grandparents to prepare their own meals motivated Lamar Pi to design MODU, a customizable tray and accessory set that attaches to walkers or wheelchairs to give people with limited mobility a stable work surface and accessible storage space.

"They're unable to stand up for long periods of time and transport-ing objects around the home is a challenge," said Pi, an Industrial Design student at San Francisco State University, of his otherwise active grandma and grandpa.

The portable prototype, inspired by a service trolley, a Japanese bento box and outdoor cookware, earned the top prize in USC Leon-ard Davis School of Gerontology's Morton Kesten Universal Design competition, an annual contest that challenges students across

the country to come up with products or spaces that can help people of all ages and abilities to live com-fortably at home.

AARP reports that nearly 90 per-cent of people over age 65 want to stay in their home for as long as possible. Employing principles of universal design can help make that a reality, says Jon Pynoos, UPS Foundation Professor of Gerontol-ogy, Policy and Planning at the USC Leonard Davis School and one of the competition's judges.

"The majority of homes were not built with people of all ages, sizes, and abilities in mind," said Pynoos. "Universal design features and products can play a critical role in the ability of all individuals to conduct their daily activities, age in their homes, and avoid institution-al settings."

Wider doorways, pull out cabinet shelves and varied counter top heights are all examples of universal design in the home.

Pynoos says that professionals are increas-ingly creating designs and products that support all ages and stages

Design for Welfare and Social Innovation Design Educational Practice of School of Design and Arts, Beijing Institute of Technology

Yue Qiu, Yulin Wu

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School of Design an d Arts, Beijing Institute of Technology

Human development, well-being and societal progress have been the bottom line and principal factors in sustainable design research and practice. It has attracted wide attention in China.

In the 2018, the Social Development goal for the Chinese government clearly points to the "all-round development of human and social progress" is an important goal of their work. In China, more and more people in design practice are engaging in the work applications that takes into account progress and development in society, along with the concern the poor and underclass society,

Founded in 1984, School of Design and Arts, Beijing Institute of Technology is one of the earliest industri-al design specialties of China. It educates and trains a large number of teachers and designers for China's in-dustrial design careers. We have started to focus on sustainable design since 2000. Research and teaching content of sustainable design and service design is added into the course for graduates after 2010. In the instruction of the undergraduate course curriculum, there are also design topics oriented towards the elderly and the disabled. This paper emphatically introduces the efforts of School of Design and Arts in promoting inclusive and sustainable design education

Figure 1: Structure chart of this paper - international exchange & cooperation in conjunction with social force.
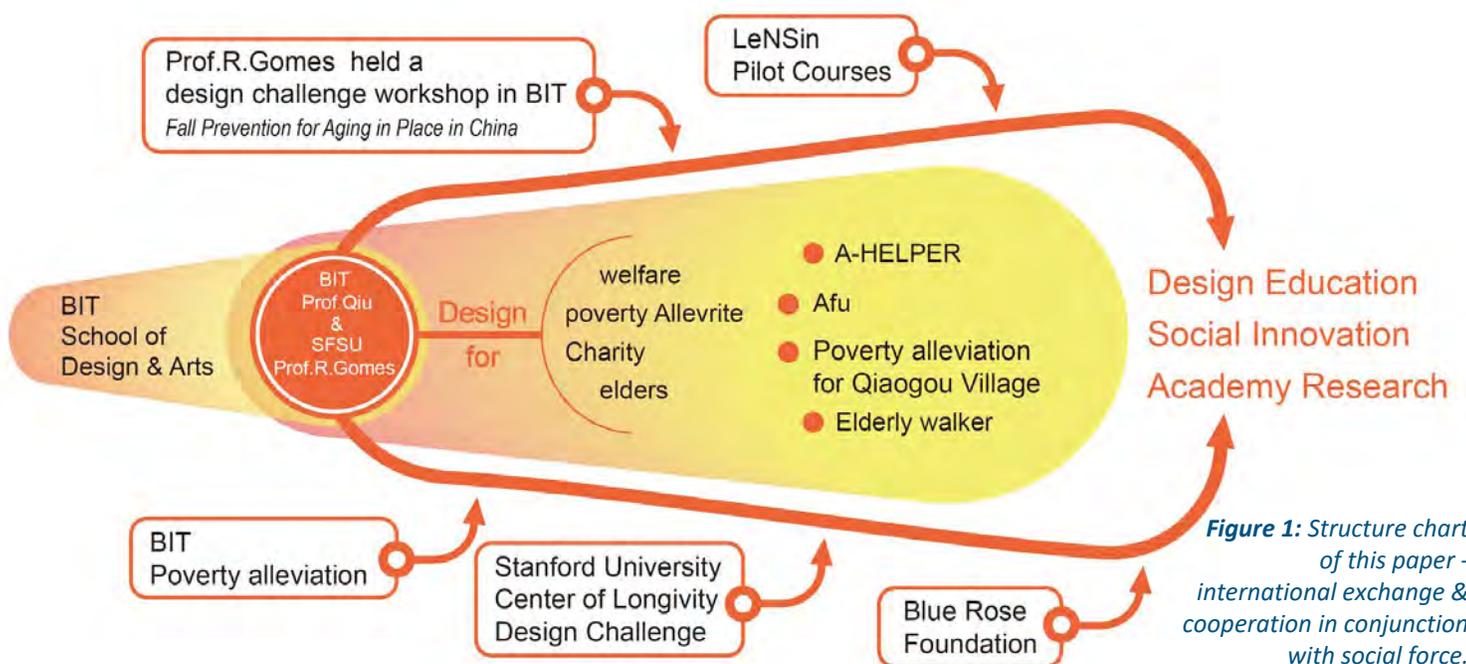
Yue Qiu, Associate Professor of School of Design and Arts, Beijing Institute of Technology, visited School of Design, San Francisco State University as a visiting scholar in September 2014. He also made a design study in the Nathan Shapira Design Archives Center presided by Professor R. Gomes, an international famous expert and educator in sustainable design.

At the class of Professor R. Gomes, students did product design research with the theme of designing for the elderly, and each student had to complete a product design that can improve mobility of the elderly.

In this course, Qiu introduced to the American students, the BIT graduate project work of his students which addressed designing an improved rollator to assist the mobility of the elderly in their stability and walking.

Figure 2: *Walking aid for the elderly,   Designed by: Jingtian Ding*

Design Case 1:

This design is the work of Jingtian Ding who graduated in 2014. This is an auxiliary tool designed to help the elderly with disabled or weakly functioned lower limbs to finish daily acts based on the daily life and activities of the elderly. Starting from empathic design, this work adopts an innovative two-way use mode to meet different use demand of the elderly indoors and outdoors. This work is a household walking aid tool specially designed for the elderly, and its style design is distinct from the conventional mobile assist devices.

At the same time, Prof. Qiu also took part in the tutorship work, as well as the design process together with students. The design concept of one student in this class, Paris Vigrass, was selected as the

2015 Stanford University Design Challenge Finalist for his "Hexi" Walking Poles concept.

Professor Gomes taught the graduate seminar course (DAI805); "Design for Living & Social Innovation," in the Spring semester 2015. Professor Gomes requested Prof. Qiu to assist him as a co-instructer. Qiu offered to have three of his BIT graduates participate in the course online and video conferencing. Students were re-quired to design products or services for the public at the lower class. Students from San Francisco focused on job trainings for the homeless people and designed garments for them. They also focused on the working designed garments for them. They also focused on the work-ing conditions of chefs in Chinese restaurants and designed new kitchen ware to relieve their reptitious labor intensity tasks. Students from Beijing were concerned about hot bathing water supply in rural families

in Northern China. Accordingly, they designed household bath facilities suitable for the vernacular living conditions and village lifestyle. During the semester each group determined different design research directions and made in-depth study on the cultural background, people, living regions and lifestyle. Income sources, life habits & consumption of China and the US were of significant differences. These contents were fresh and enlightening to all the students, and also broadened their horizon. Every student conceived, created and executed, excellent final learning outcomes.

Design Case 2: Rural families in North China heat independently, without a central hot water supply sys-tem. Since these families produce little hot water through the traditional stoves and they cannot afford solar water heaters, they have to go to the bathhouses in town for bath. Besides, generally they do not have specific bathrooms at home. For these inconvenience, people in rural areas take a bath every 3-7 days.

This design produces hot water through surplus heat generated by the boiler plants widely used in villages, and then conveys hot water to the water storage tank arranged beside the boiler through a radiator. The water storage tank is designed into two layers, with the outer layer made of better heat insulation materi-als and the inner layer made of good heat conduction materials. $C_2H_3NaO_2 \bullet 3H_2O$, a phase-change materi-al capable of storing heat is mixed between the outer layer and the inner layer. The special materials can store heat produced by the boiler when it is used, and dissipate stored heat to heat cold water in the water storage tank when the boiler is extinguished. Hot water in the water storage tank is pumped to the water tank at the top of the bathroom by the water pump through a pipe, and used water is discharged from the downside through the pipe. To reduce trans-portation and assembly cost, the bathroom is built through assemblies of boards and frames.

Prof. Qiu returned to BIT and started to initially seek to combine with social organizations and re-sources, so as to promote the design education and design practice oriented at the vulnerable groups in autumn 2015. After successfully negotiating with Blue Rose Foundation—a foundation affiliated to the All-China Women's Federation and devoted to philanthropy for women and children, Qiu started to design a charity APP "Afu Public Welfare"in November 2015. Afu aims to build a transparent online charity platform for physical object donation,

thereby making contributions to China's charity career. More than ten graduate students participated in the Afu project and made a complete design study, from product planning, to interactive design and to visu-al design. The prod-uct and interactive design work was basically finished in August 2016. The software pro-gramming work of Afu was in the charge of Fu Xu, Associate Professor of School of In-formation Science & Technology of BJFU. After finishing programming and deployment in May 2017, they put this APP into pilot run. Now the Afu platform is available in Android and Apple application stores.

Design Case 3: Given several problems in the development of China's philanthropy, such as the credibility crisis, low effi-ciency and discrepancy with the lifestyle, the design of Afu aims to improve dignity of both the recipients and contributors, promote social cooperation and realize transparency and convenience of information. Besides, a "Witness" system is designed for Afu, under which rural school teachers, NGO staff, religionists and government officials responsible for the poverty-relief work can become the "witness" and recom-mend poor in need of help to join in the platform. This system ensures that all people asking for help at Afu platform do really need the help. Thus, this design significantly improves people's confidence of doing charity through Afu. Different from the traditional platform where the re-cipients are in the passive state of material reception, the online platform of Afu realizes information equiva-lence that through the platform, the recipients release material help-seek information and the contributors release donation information, and both sides seek for materials or contributors autonomously. Besides, in-formation equivalence not only realizes most reason-able utilization of donated physical objects through cooperation of the recipients and the contributors but also maintains self-esteem of both sides.

Forthcoming Issues

July 2018 Vol-13 No-7

Professor Maria Luisa Rossi, Chair of MFA Integrated Design Program at CCS, has agreed to be the guest editor for the issue. Students in her program as well as other programs at CCS have developed a number of socially responsible design projects.

She is the Chair and Professor of MFA Integrated Design at the College for Creative Studies in Detroit where she brings an entrepreneurial culture, globally-focused and cultural empathetic approaches to the growing of the next generation of designers. Her works focus on the seamless capacity to deal with tangible and intangible aspects of user experiences, preparing "facilitators" capable to address global-glocal grand challenges.

Strongly centered on the design process, the program prepare students for the practice of designing omni-channel journeys [products-strategy-services] focused to the quality of the users experience with a special eye to socially relevant solutions. As an undergraduate in Florence, Italy, her wearable computer project work was featured in the prestigious Domus magazine, earning her a scholarship to attend the premiere master's program in industrial design at the Domus Academy in Milan were she got her Master of Industrial Design.

August 2018 Vol-13 No-8

Sameera Chukkapalli (1992) is currently a fellow at the FabCity Research Laboratory, Barcelona, Spain. She founded needlab, a non-profit organization to create a model of optimized practice to deliver maximum impact with the objective of making a difference to the communities. She was the project director and tutor for the Needlab_Kuwait Matters, India Matters, Vietnam Matters. She is working as Space Designer with CARPE LA Augmented Reality project in Los Angeles, USA, funded by the LA2050 program, to eliminate gray zones in public parks and to make them user-friendly.

She has represented needlab and lectured in five countries on three continents, actively initiating a conversation about Human Centered design with Policymakers.

Sameera graduated, with MA Arch in Digital Matter and Construction, and completed Open Thesis Fabrication, on Large-Scale Natural additive construction using robots, from IAAC, Barcelona, Spain. Obtained B. Arch degree from BMSCE, Bengaluru, India, and the University of Berkeley, USA; Worked with External Reference Architects in Spain; Worked with VTN Architects in Vietnam, on the Tokyo pavilion "Bamboo Forest" for Japan and "S House"(low-cost housing prototype) for Vietnam.

September 2018 Vol-13 No-9

Dr.Bijaya K. Shrestha received Doctoral in Urban Engineering from the University of Tokyo, Japan (1995-'98) and Master in Urban Design from the University of Hong Kong, Hong Kong (1993-'95). Having professional experiences for almost three decades he had served to numerous organisations – Government of Nepal, educational institutions, private sector and United Nations Centre for Regional Development (UNCRD): Disaster Management Hyogo Office, Kobe, Japan, besides consulting works for ADB, UNICEF and UN-Habitat. His contribution in establishing Post Graduate Department of Urban Design and Conservation at Khwopa Engineering College in 2007 is noteworthy, where he served as Head of Department for two years. At present, he is engaged in ADB supported projects and research works in different Architectural Schools, besides editing international journals and conference papers. He is the recipient of numerous gold medals and prizes for his excellent academic performance. He was decorated by 'Calcutta Convention National Award 2006' by Indian Society for Technical Education for his best paper at the 35th ISTE Annual convention and National Seminar on Disaster – Prediction, Prevention and Management. He has already contributed more than ten dozen of papers, published in various forms: book chapter, international journals, conference proceedings, local magazines and journals including in local newspapers. He is regular writer for

October 2018 Vol-13 No-10

Dr. Sugandh Malhotra has over sixteen years professional experience in industrial design and automotive styling industry. He has worked on design projects for marquees in the industry that include Honda R&D, Hero Global Design, Hi-Tech Robotic Systemz Ltd., SETI Labs Berkley, Aprilia Motors Italy, Bombardier Canada and most of the leading

automotive and consumer brands of India. He has been instrumental in design of over 18 techno-commercially successful launched products at a pan India level. He has won many International and National level design awards. Dr. Malhotra takes keen interest in teaching design and has been mentoring students from many leading institutions such as IIT Delhi, IIT Roorkee, SPA Delhi, Lady Irving College, IILM, Pearl Academy among others. Currently, he is working as an Assistant Professor and the Coordinator of MVD program in IDC School of Design at IIT Bombay. His research interest areas include design research methods, future design possibilities, trend research and design forecasting and intelligent mobility systems.

November 2018 Vol-13 No-11

Asst. Professor Yasmeen Abid Maan (Associate MIAP, MPCATP) PhD Scholar (College of Art & Design, University of The Punjab) M-Phil (Arch), University of The Punjab, B Arch (UET, Lahore) has accepted our invitation for Guest Editor.

December 2018 Vol-13 No-12

Robert Nichols , an Owner of Nichols Design Associates, Inc., Washington, DC has been extensive experience in Architectural Design and Universal Design for over 35 years. His expertise within this area of specialty includes building surveys and ADA Accessibility checklist for the public and private clients.

He is President and Chairman of the Board of World Deaf Architecture, Inc. (WDA), a new knowledge group of American Institute ofArchitects (AIA), since a non-profit organization was established in 2016. Received B.Arch. & M. Arch. degrees in Urban Design under the leadership of Prof. Colin Rowe from Cornell University will be our Guest Editor.

Obituary: CSOM

Professor James Gips Passes Away

Information systems professor James Gips passed away unexpectedly on Saturday night, according to an email sent to members of the CSOM Honors Program. Although the specifics of his death have not yet been released, Gips was recovering from surgery on his pancreas at the time, Ethan Sullivan, the associate dean of the undergraduate program in CSOM, wrote in the email.

Gips, the John R. and Pamela Egan Chair of Computer Science, taught at BC from 1976 until the end of this academic year.

"When BC students take classes over the years they typically work hard, get their grades and move on," said Dean of CSOM Andy Boynton in an email. "Not so for students fortunate enough to take the exceptional classes offered by Jim Gips. Through this superb teaching and thoughtful advising Jim made a lasting impression and had far reaching impact on many, many undergrads over the years (myself included) because he cared deeply about who we were as people and what we would do with our lives."

Gips's research covered a wide variety of topics, including founding work on shape grammars, algorithmic aesthetics, grammatical inference, and ethical robots. For several years, he worked with marketing professor Adam Brasel to research how consumer behavior and psychology has been affected by technology and new media, and the two co-created BC's Marketing Interfaces Lab. Most notably, Gips developed ways to enrich the lives of people with severe disabilities by enabling them to interact with computers, thereby empowering them to communicate with the outside world.

As part of the EagleEyes Project, Gips helped develop two technologies that allow individuals who cannot speak and can move only their eyes and head to access computer technology. The first, EagleEyes, allows people to control the mouse pointer on a computer screen by moving only their eyes, through the means of electrodes placed on their head to sense eye movement. The second, Camera Mouse, allows people to control computers solely by moving their head—it is available to download for free and works through standard webcams to track head movements.

"Jim's commitment to others extended well beyond the classroom," Boynton said. "His intellectual work and research were highly creative … and his EagleEyes breakthrough — combining artificial intelligence, visualization, and robotics — allows people to control the mouse with subtle moves of their head. EagleEyes, largely through Jim's brainpower and persistence, has enabled thousands of people with cerebral palsy, spinal muscular atrophy, brain injury, and other disorders to use a computer opening up worlds of capabilities, ideas, and information."

In 2006, EagleEyes was named a Technology Award Laureate by the Tech Museum of San Jose. Gips also won a da Vinci Award, which honors "exceptional design and engineering achievements in accessibility and universal design, that empowers people of all abilities," for the project in 2007.

"Let's put it this way, if there was a "Hall of Fame" for Carroll School Faculty, Jim would easily be a sure-fire first ballot selection," said Boynton. "We'll all miss him, but his name will be spoken around here for decades." (Courtesy: The Heights)

New Books

Higher Education:

it is available on www.morebooks.de one of the largest online bookstores. Here's the link to

it: https://www.morebooks.de/store/gb/book/design-for-all/isbn/978-613-9-83306-1

The Ultimate Resource for Aging in Place With Dignity and Grace!

Are you looking for housing options that are safer and more accommodating for independently aging in place? Do you want to enjoy comfort, accessibility, safety and peace of mind – despite your disabilities, limitations and health challenges? The help you need is available in the Universal Design Toolkit: Time-saving ideas, resources, solutions,and guidance for making homes accessible.

This is the ultimate resource for individuals and professionals who want to save time, money and energy when designing, building, remodeling or downsizing a home. The Universal Design

Toolkit will help you take the steps to design homes for your clients or yourself while eliminating the costly trial and error challenges you'd inevitably encounter if faced with this learning curve on your own.

Rosemarie Rossetti, Ph.D., teamed with her husband Mark Leder in creating this unique Toolkit. They bring ten years of research, design and building expertise by serving as the general contractors for their home, the Universal Design Living Laboratory– which is the highest rated universal design home in North America.

Within the Toolkit's 200 richly illustrated pages, you'll find:

- Insights that distinguish *essential* products, services and resources from the *unnecessary*.
- Proven, realistic tips for finding the right home.
- Home features you need to look for. Nothing is assumed or left out.
- Handy home checklists and assessments.
- Interview questions to help you hire industry professionals with knowledge and experience.
- Photographs that provide a frame of reference to inspire, clarify and illuminate features and benefits.
- Valuable resources to save you time, money and energy.
- Helpful sources of funding.
- Space planning dimensions for access using assistive devices such as wheelchairs and walkers.
- And so much more!

If you want useful, dependable advice and easy to implement ideas from respected experts who know the ropes, you'll love Rossetti and Leder's perspective. As a speaker, author and consultant who uses a wheelchair, Rossetti has helped hundreds of people design their ideal homes. Now her comprehensive Toolkit is available to help and support you!

Get the Universal Design Toolkit now to start your project!

Disability, Rights Monitoring and Social Change:

Product Design
A course in first principles

Elivio Bonollo
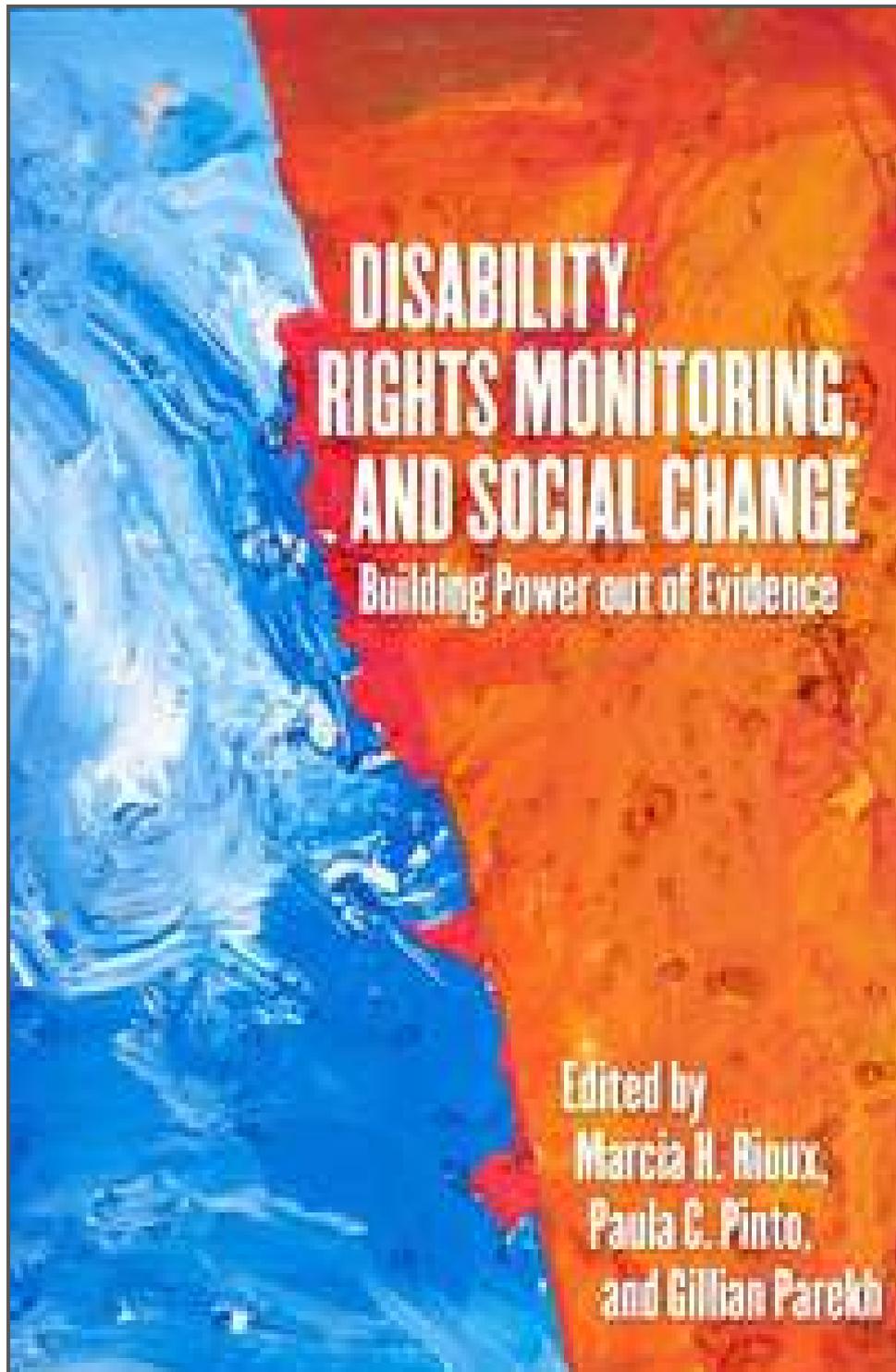
Amazon.co.uk

http://www.amazon.co.uk/Product-Design-course-first-principles/dp/1784562939/ref=sr_1_fkmr0_1?m=A2U321JN96E0UZ&s=merchant-items&ie=UTF8&qid=1456434788&sr=1-1-fkmr0&keywords=Bonollo+Prrroduct+Design%3A+A+course+in+first+principles

Amazon.com

http://www.amazon.com/Product-Design-course-first-principles/dp/1784562939/ref=sr_1_sc_1?ie=UTF8&qid=1456434322&sr=8-1-spell&keywords=Bonollo+Product+Design%3A+A+course+infirst+principles

Product Description

In this book, Elivio Bonollo takes us on a 'learning journey' about design including a scholarly explanation of the characteristics and power of the design process. It provides valuable insights into the attitudes, knowledge and skills that underpin the design discipline at an introductory level of expertise, and has been developed to meet the needs of aspiring designers in many areas including industrial design, design and technology, art and design and architecture. Elivio uses an operational model of the design process - along with related educational strategies, learning outcomes and an ordered set of design briefs - to develop a systematic, problem-based method for learning design from a first principles viewpoint. The beauty of this approach is that it brings structured learning to aspiring designers whilst being mindful of diverse cultures and backgrounds. Each part of this book encourages self-expression, self-confidence and exploration: it is has been carefully designed to take the reader on a highly motivating journey of design thinking and creativity, supported by excellent sample solutions to design problems, lucid discussions and extensive references. These solutions, developed by design students, serve as novel examples of how to solve real problems through innovative design without restraining creative freedom and individual personality. The design learning method and strategies in this book will greatly assist design and technology teachers, students of design, aspiring designers and any individual with an interest in professional design practice.

I cannot recommend this book highly enough, it was a complete lifesaver throughout my undergraduate studies and honours degree and now continues to serve me well as I move into industry practice. The content is easy to understand and follow, providing a practical guide to understanding design principles and every aspect of the design process. It includes great project examples and reflects the wealth of knowledge and experience possessed by this accomplished educator. I have purchased multiple copies of this book for peers and would suggest any student who is studying a design discipline to pick up their own copy as this has quickly become the most useful book in my design collection.

Comment | Was this review helpful to you? Yes No Report abuse

⭐⭐⭐⭐⭐ A 'Must Have'.
By Amazon Customer on 7 April 2016

As a Design Education professional of many years standing, I endorse this book without reservation. It is comprehensive, lucid and above all, useful in a very accessible level at the coalface. Professor Bonolo has an enormous cache of experience as an engineer, designer and design educator and his experience is well demonstrated in this book. A 'must have' for anyone in the business of educating or being educated in the product design arena.

Tapping into HIDDEN Human Capital

How Leading Global Companies Improve their Bottom Line by Employing Persons with Disabilities

DIS **ABILITY**

Debra Ruh
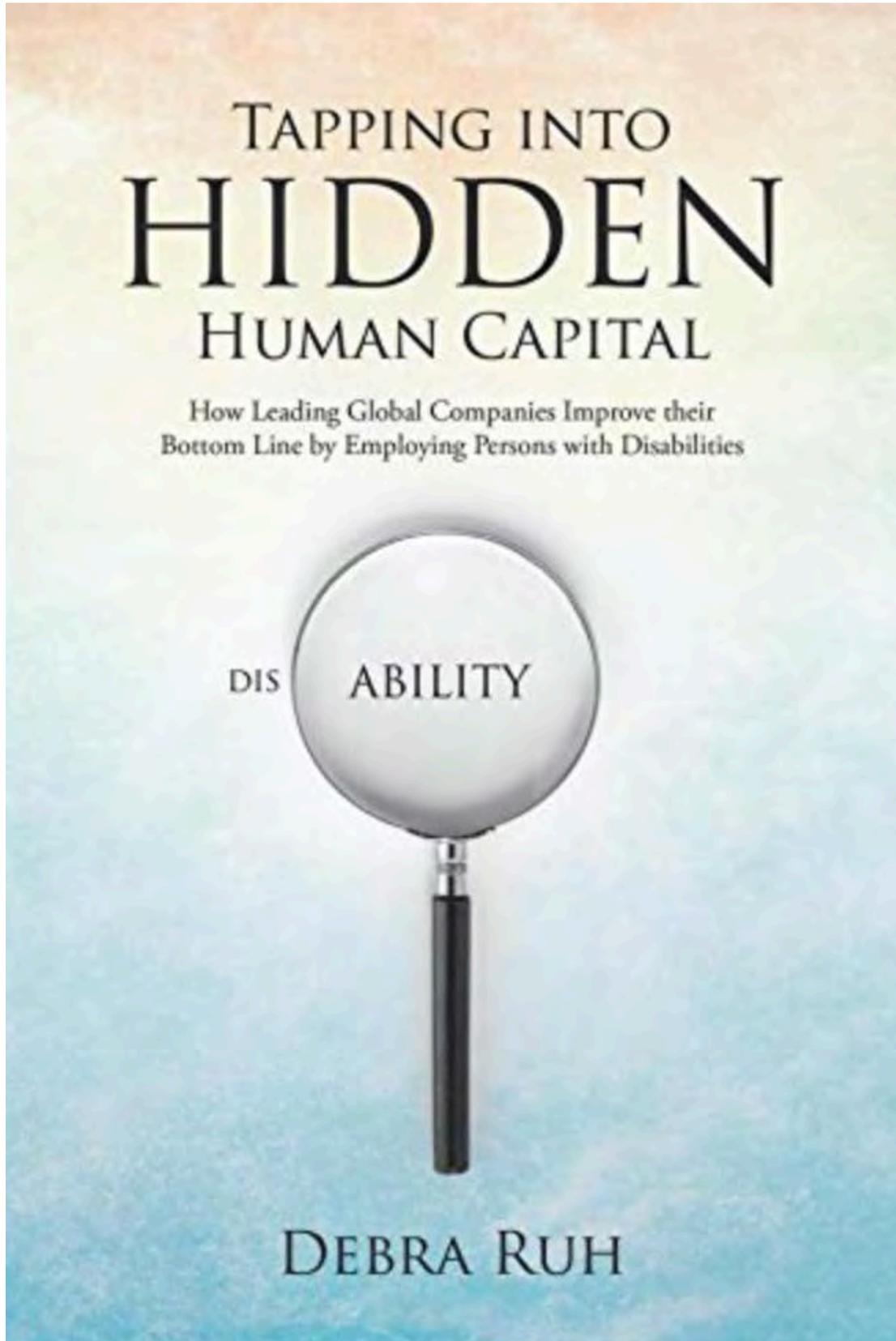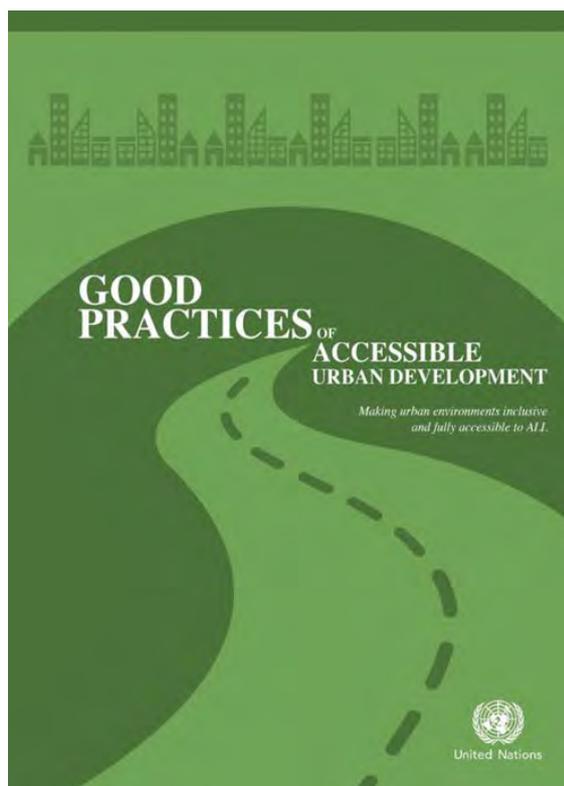
In light of the forthcoming United Nations Conference on Housing and Sustainable Urban Development (HABITAT III) and the imminent launch of the New Urban Agenda, DESA in collaboration with the Essl Foundation (Zero Project) and others have prepared a new publication entitled: "Good practices of accessible urban development".

The publication provides case studies of innovative practices and policies in housing and built environments, as well as transportation, public spaces and public services, including information and communication technology (ICT) based services.

The publication concludes with strategies and innovations for promoting accessible urban development.

The advance unedited text is available

at:http://www.un.org/disabilities/documents/desa/good_practices_urban_dev.pdf
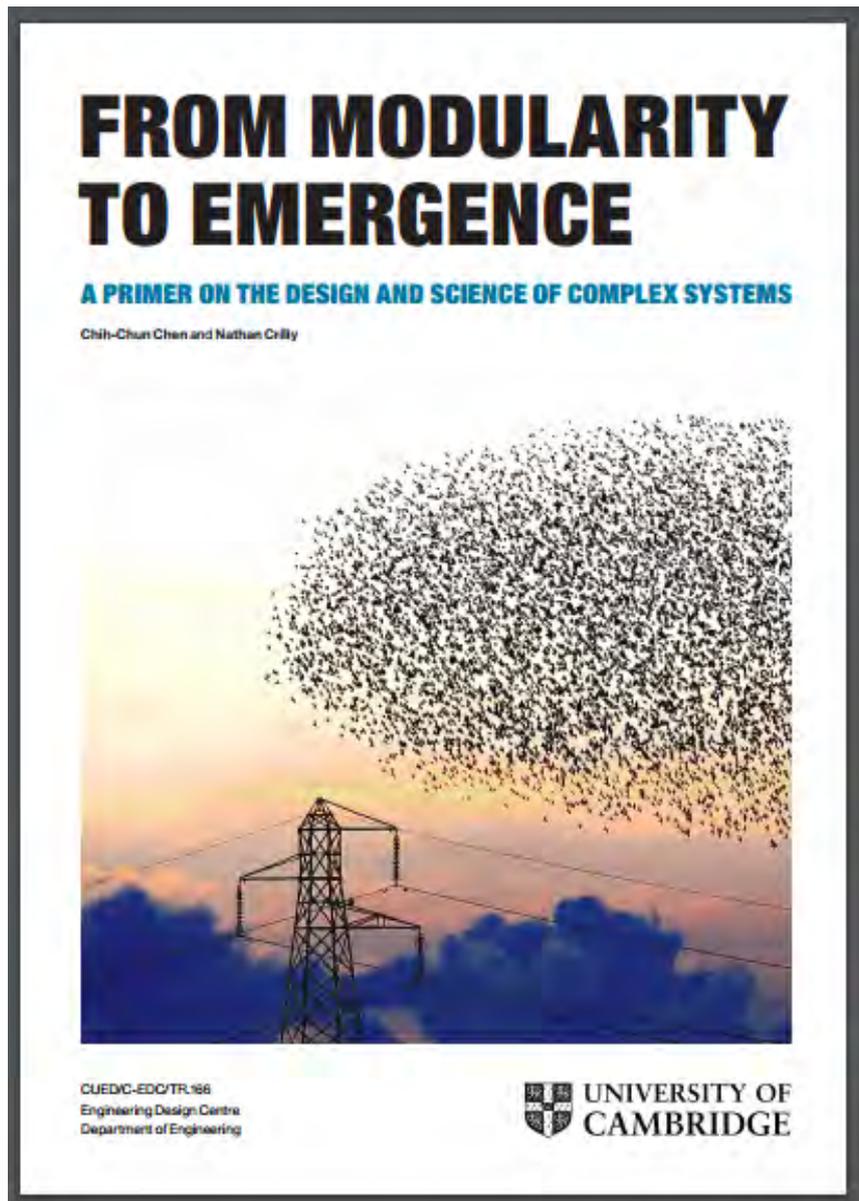
Dr Chih-Chun Chen and Dr Nathan Crilly of the Cambridge University Engineering Design Centre Design Practice Group have released a free, downloadable book, _A Primer on the Design and Science of Complex Systems_.

This project is funded by the UK Engineering and Physical Sciences Research Council (EP/K008196/1).

The book is available at URL:

http://complexityprimer.eng.cam.ac.uk

Changing Paradigms: Designing for a Sustainable Future

Editors:
Peter Stebbing,
Ursula Tischner

CUMULUS THINK TANK
Publication No. 1 of the Think
Tank Series from the Cumulus
International Association of
Universities and Colleges of
Art, Design and Media

Cumulus

Changing Paradigms: Designing for a Sustainable Future

New iBook / ebook:
HOW TO DO ECODESIGN

ECODESIGN HANDBOOK

HOW TO DO ECODESIGN

PRACTICAL GUIDE FOR ECODESIGN – INCLUDING TOOLBOX

ISSUED BY THE GERMAN FEDERAL ENVIRONMENT AGENCY

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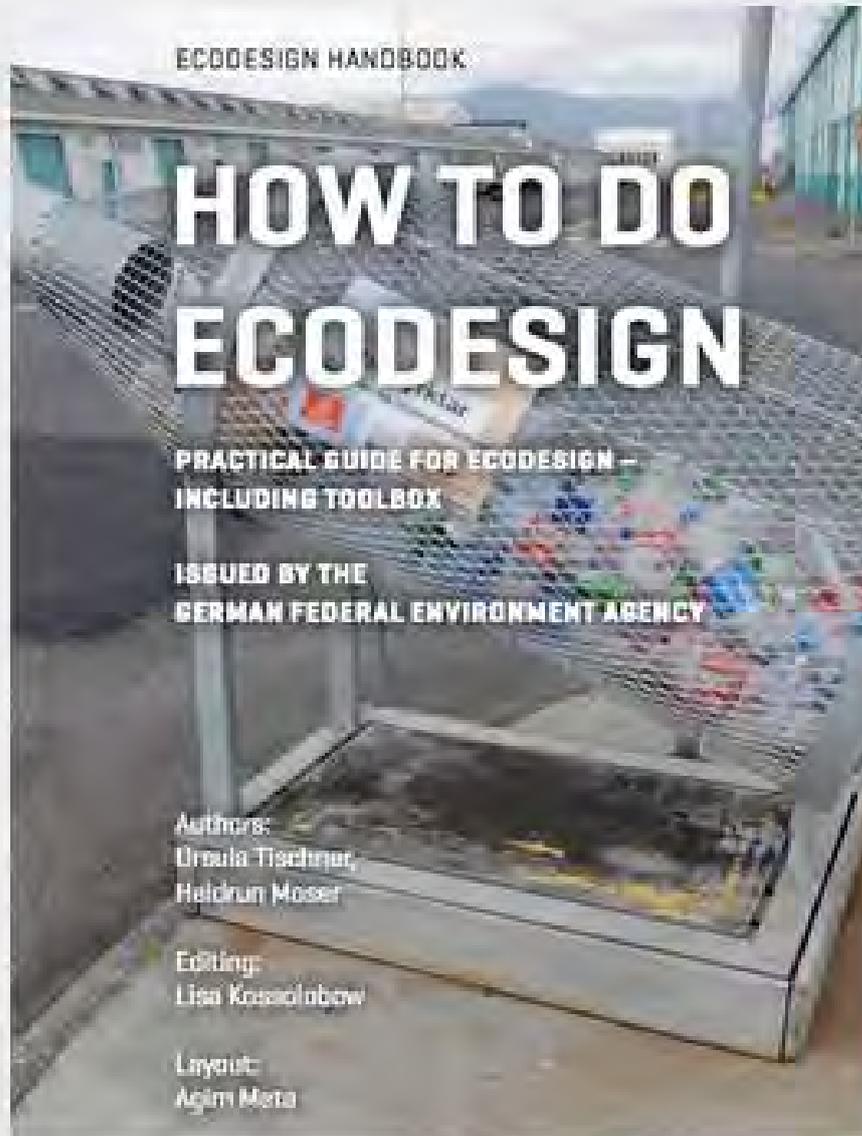
Practical Guide for Ecodesign – Including a Toolbox
Author: Ursula Tischner
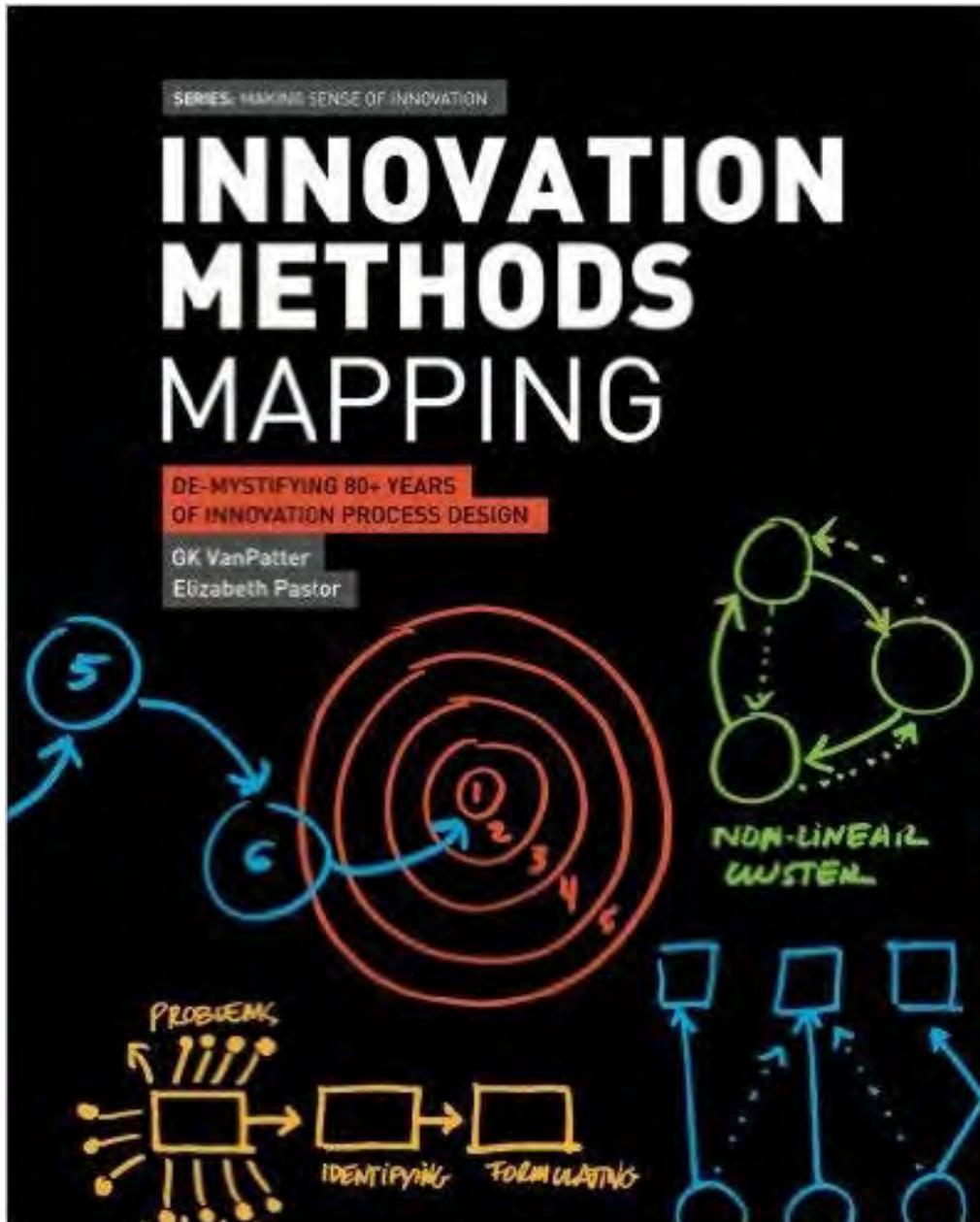
Humantific's new book: Innovation Methods Mapping has just been published and is now available on Amazon.

https://www.amazon.com/dp/1540788849/ref=sr_1_1?ie=UTF8&qid=1482329576&sr=8-1&keywords=Humantific

You can see the preview here:

https://issuu.com/humantific/docs/innovation_methods_mapping_book_pre
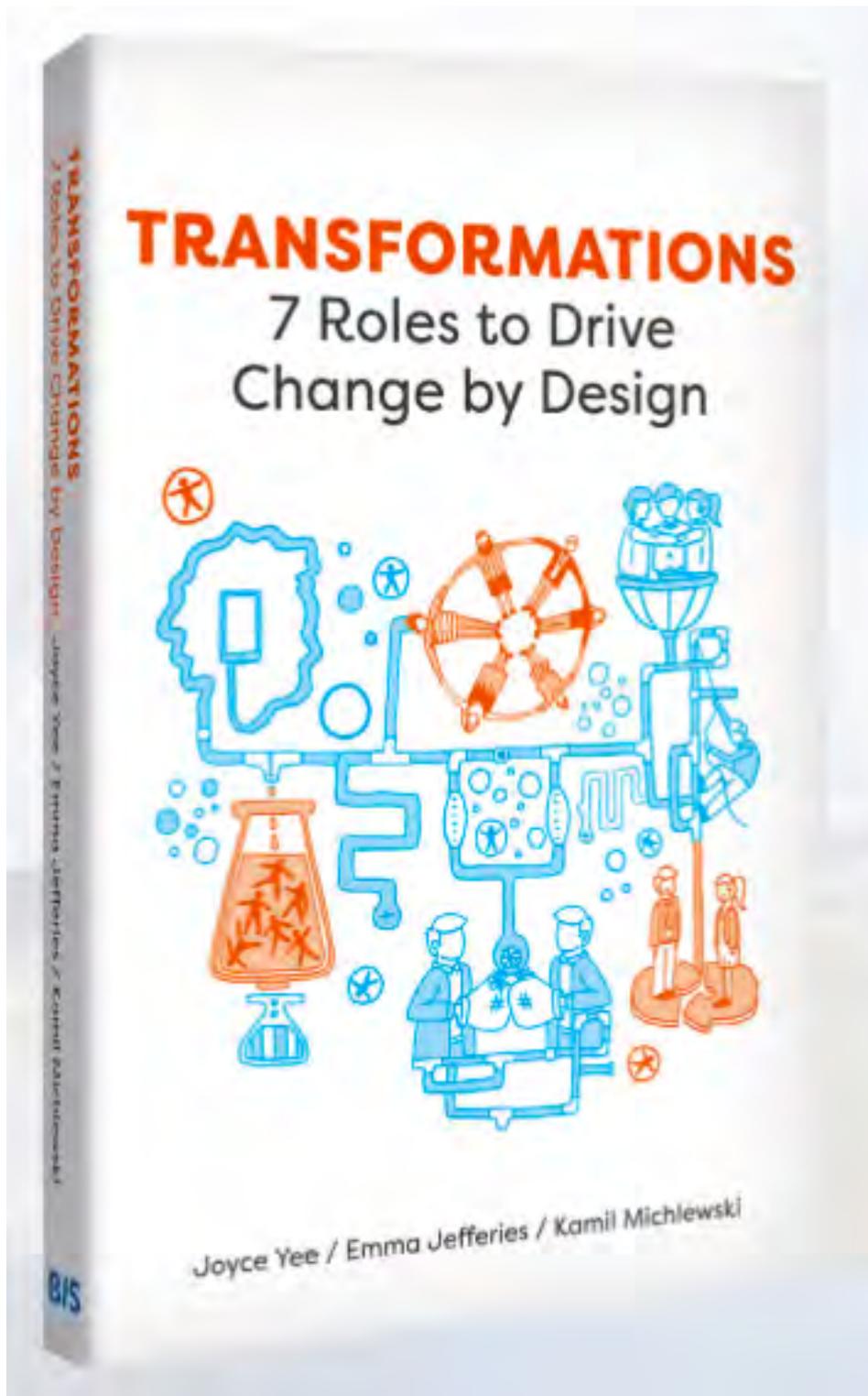
Pre-book form

Thank you for your interest in the book, 'The Design Journey of Prof. Sudhakar Nadkarni'. Few limited copies will be available for purchase on the day of IDC Alumni Meet, on June 11th, Sunday, 5:30 to 6:30 pm. Rest of the book orders will start shipping June 25th, 2017 onward.

* Required
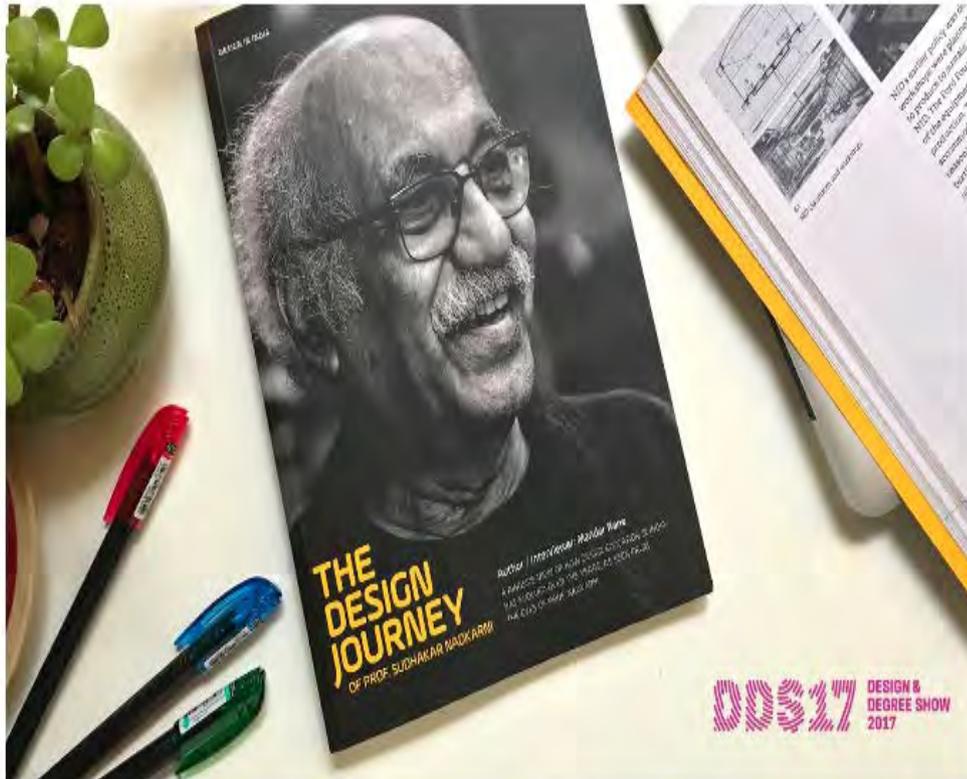
How many copies of the book do you wish to buy? *

Arnar Árnason and Sigurjón Baldur Hafsteinsson

DEATH AND GOVERNMENTALITY
Neo-liberalism, grief and the nation form

Universal Design: The HUMBLES Method for User-Centred Business
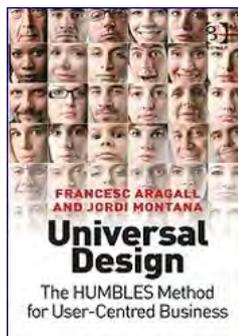
"Universal Design: The HUMBLES Method for User-Centred Business", written by Francesc Aragall and Jordi Montaña and published by Gower, provides an innovative method to support businesses wishing to increase the number of satisfied users and clients and enhance the irreputation by adapting their products and services to the diversity of their actual andpotentialcustomers, takingintoaccounttheirneeds, wishesandexpectations. The HUMBLES method (© Aragall) consists of a progressive, seven-phaseapproach for implementing Design for All within a business. Byincorporating the user'spoint of view, itenablescompanies to evaluatetheirbusinessstrategies in order to improveprovideanimproved, morecustomer-orientedexperience, andtherebygain a competitiveadvantage in the marketplace. As well as a comprehensiveguide to the method, the bookprovidescasestudies of multinationalbusinesswhichhavesuccessfullyincorporated Design for All intotheirworkingpractices.

According to SandroRossell, President of FC Barcelona, who in company withotherleadingbusiness professionals endorsed the publication, it is "requiredreading for thosewhowish to understandhow universal design is the onlyway to connect a brand to the widest possible public, increasing client loyaltyandenhancing company prestige". To purchase the book, visiteither the Design for All Foundation website
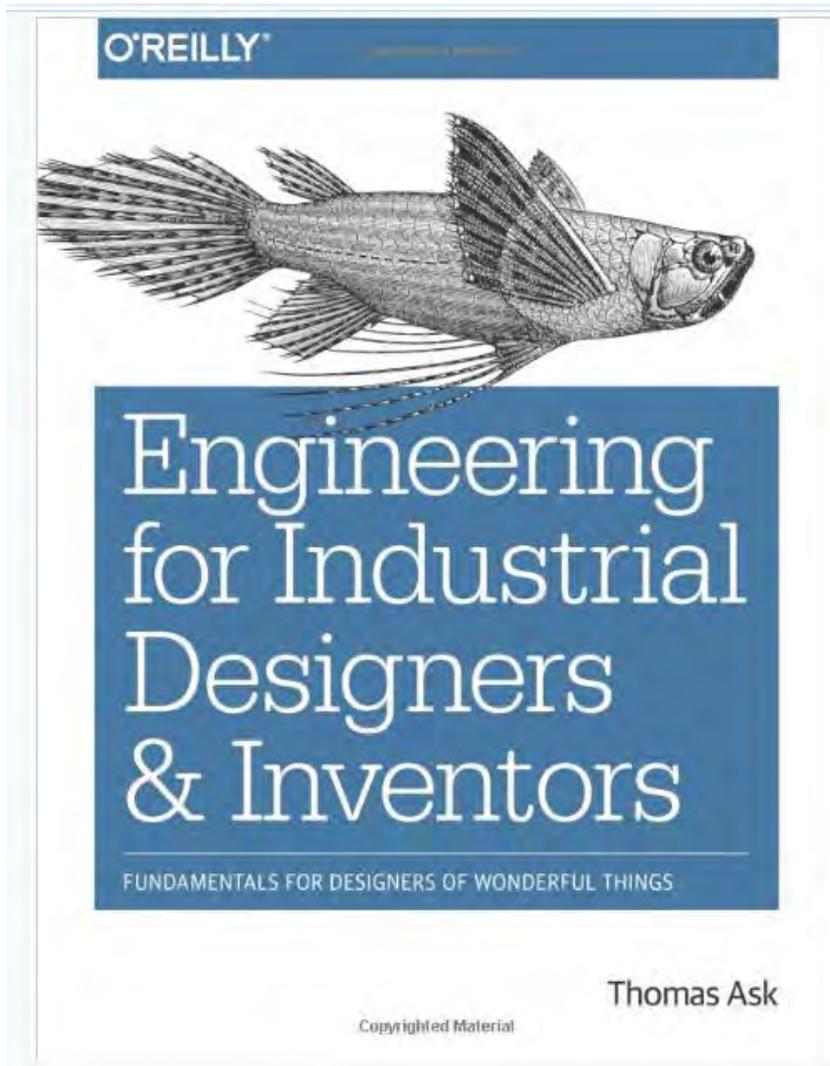
I have a new book that presents fundamental engineering concepts to industrial designers that might be of interest to you. This is the

link:

https://www.amazon.com/Engineering-Industrial-Designers-Inventors-Fundamentals/dp/1491932619/ref=sr_1_1?ie=UTF8&qid=1506958137&sr=8-1&keywords=engineering+for+industrial+designers+and+inventrs

News

1.

IIT Roorkee gets 10-cr design Innovation Centre

ROORKEE: Indian Institute of Technology Roorkee is going to establish a Design Innovation Center (DIC), named (Navonmesh) at a cost of Rs. 10 crore. Funded by the Ministry of Human Resource Development (MHRD), Government of India, It will address issues of the Himalayan Region using resources available locally as well as National Priorities.

The objective is to develop innovative designs primarily to address the local issues which need low cost solutions and to nurture and advance the culture of design and innovation in the region to improve the quality of life.

Highlighting the importance of this Center to the Himalayan Region and the country, Prof Ajit K Chaturvedi, Director, IIT Roorkee, said, "I am happy that IIT Roorkee has been selected for setting up a Design Innovation Center. We already have an ecosystem in place and I am sure our faculty members and students will take full advantage of the frame work provided by DIC."

"The DIC aims to produce region-specific products and will support innovative proposals for product development. It has also some unique outreach programs such as COMAL (Common MAn to Laboratory), under which DIC will connect with the common man, who often has innovative ideas, but usually gets deprived of proper mentoring, to take his ideas to reality. I am sure the Design Innovation Center, along with the Spoke partners, will focus on the specific problems of the region which will benefitthe society," said Prof Ajit K Chaturvedi.

The DIC has already identified several products that are going to be developed. They include:

Crop harvester for terrains,

Green furniture based on forest waste materials,

Assistive device differently-abled persons.

High yield loom design for Uttarakhand local weavers

Lab-on-chip

Inclusive Education Kit

The DIC will also take up Industrial Consultancy and Collaborative Activities besides conducting Workshops/Seminars and U2U (Udbhavan to Utpadan). Speaking about the vision of this Center, Prof Manoranjan Parida, Dean (Sponsored Research and Industrial Consultancy), IIT Roorkee, said, "The DIC will evolve a unique model of focusing on the development of a culture of collaborative partnership with society, industry and other stakeholders to develop state-of-the-art outcomes. Addressing the needs of differently-abled persons is among the priority areas."

The MHRD approved the proposal of IIT Roorkee to establish the DIC under the National Initiative of the Ministry for setting up of Design Innovation Center, Open Design School and National Design Innovation Network. Mr. Krishna Rao who just graduated (B.Tech., Production and Industrial Engineering), IIT Roorkee, said, "The P2P (Prayogshala to Prayogkshetra) initiative gives students a chance to learn and develop productsfrom the research work that they've done for their final year project."

The DIC is a path to 'Make in India.' It will act as a mediator to help students and researchers go the extra mile forward and give a physical form to their ideas, help them realise how their products will perform in the market, added Mr. Krishna Rao.

The proposed DIC will operate in the 'Hub and Spoke' Model, in which IIT Roorkee will be the Hub Institute; three other premier Institutions of the region – National Institute of Technology Uttarakhand (NITUK), Indian Institute of Management Kashipur (IIM-Kashipur) and College of Technology, G.B. Pant University of Agriculture and Technology (GBPUA&T), Pantnagar, shall participate as the Spokes.

The other institutions have also developed their specific proposals –to address local problems. As per guidelines of MHRD, the Spokes are allocated one-third of the total budget.

The proposed activities of the DIC will be carried out under three major categories:

(i)   Supporting innovative product-based projects of faculty members and students,

(ii)   Academic activities, and

(iii)   Outreach activities.

(Source : The Hans India)

Programme and Events

Access Israel's 6th Annual International Conference on
Innovation & The Future of Accessibility
29 April 2018 - Israel
Avenue Conference Center - Airport City

The DesignEuropa Awards celebrate excellence in design and design management among Registered Community Design (RCD) holders, whether they are individual right holders, small businesses or large enterprises.The Awards seek to recognise companies and designers that have brought outstanding design to the market with the support and protection of the RCD.

Voices of Good Design - What is Good Design?

Australia's only international design award program is open for entries, across 10 design disciplines and over 25 sub-categories.

Join us for the **2018 EDRA49 Annual Conference** in the **Oklahoma City, Oklahoma!** Walk along the streets of Oklahoma City, home to an attractive variety of historic buildings. Eye-catching religious buildings, and magnificent structures of great architectural and historic significance. **Stay tuned for registration to open in late Fall.** Check out what OKC has to offer, click here.

The weather in Toronto has warmed up and the IFA is preparing with anticipation to host over 1200 delegates from more than 75 countries in August 2018.

Human-Work Interaction Design (HWID'18) - Designing Engaging Automation

5th IFIP WG 13.6 Working Conference

August 20-21, 2018

Aalto University, Espoo, Finland

In continuation with the series of the Human Work Interaction Design working conferences, the fifth edition will take place in Espoo, Finland, on the 20th and 21st of August, 2018. The venue is the brand new building of School of Arts, Design and Architecture in Aalto University, Otaniemi campus.

Important dates:

Full paper submission deadline: April 2nd

Poster submission deadline: April 30th

Acceptance notifications: May 11th

Early bird registration deadline: May 31st

Conference: August 20-21, 2018

Theme, Scope and Focus:

This year's theme is Designing Engaging Automation. While we do not exclude other aspects of work analysis and designing interactions for work contexts, we encourage authors to share especially their research on human aspects in workplace automation in the 2018 edition of HWID conference.

Interaction design for work engagement has lately started to gather more attention, especially in designing tools for employees. Work engagement takes usability of interactive systems to the next level by providing employees pleasurable and meaningful experiences via the tools used at work. The theme of HWID'18 emphasizes the need for providing these experiences also when parts of the work are automated.

Examples of relevant questions include:

- Is automation making work less interesting or more engaging?
- How to improve work engagement by automation?
- How to share work optimally between humans and automation?
- How to maintain operator vigilance in highly automated environments?
- How to support situation and/or automation awareness?
- How to evaluate the impact of automation on work engagement?

This working conference aims to answer these questions to support professionals, academia, national labs, and industry engaged in human work analysis and interaction design for the workplace. We will discuss the tools, procedures, and professional competences needed for designing for and evaluating engaging automation in workplace contexts.

We invite two types of submissions:

1. Full papers (max 15 pages, excluding references) and
2. Poster submissions (max 4 pages, excluding references).

For both types of submissions, the authors must use the LNCS templates available from Springer. Please submit your work in PDF format to EasyChair.

All accepted papers will be published in the working conference proceedings in the form of an electronic copy with ISBN and made available to the participants. During the review process, the reviewers are asked to evaluate whether the paper is suitable for a HWID's Springer book (Springer-Verlag) that will be made available after the conference. We aim at

most accepted full research papers to be included here, but also the possibility to have a very interesting perspective from industry or similar represented.

Conference web site: https://blogs.aalto.fi/hwid2018

Global Architecture & Design Awards
Architecture | Interior | Landscape | Urban Design | Product Design

rtF GLOBAL ARCHITECTURE AND DESIGN AWARDS 2018

MEDIA PARTNERS

ARCHIBAZAAR | World Architecture Community

OPEN TO ALL   ENTRY FREE FOR RTF MEDIA LAB MEMBERS

universal design CONFERENCE

4-5 September 2018
Brisbane
Convention and
Exhibition Centre

TRANSED TAIPEI 2018

15th International Conference on Mobility and Transport for Elderly and Disabled Persons
(TRANSED 2018)

Mobility for all:
Connecting the World with Accessible Transportation

November 12 ◑ 15, 2018
TAIPEI INTERNATIONAL CONVENTION CENTER (TICC)

'Expo CD'

3 Day Workshop:
'Communication Design for IT and Media Professionals'

19th- 21st July 2018 from 9.30am - 5.30 pmat IDC School of Design, IIT Bombay

Introduction:

The course Expo CD is a refresher course on the finer aspects of Communication Design specifically meant for IT and Media Professionals..

The course will inform the participants about the overall aspects of Communication Design for the Digital Media, a deeper understanding of Communication Graphics, Methods for Structuring and Visualisation of Information as well as exposure to creative processes for solving communication problems.

The subjects covered during the workshop include - Typography for Digital Media, Expressive Typography, Typography for the Web, Information Graphics, Information Visualisation, Communication Graphics, Icon Design, Design Process, Design Methodology, Interactive Design, Identity Design, etc..

The course is scheduled to have lecture and discussion sessions in the morning followed by workshops on Communication Design related creative problem solving sessions in the afternoon

International Architecture Awards

One of the most famous Architecture Awards across the globe, International Architecture Awards hosted by Architecture Podium brings its winners to the top in the industry. Some of the previous winners include Aedas, TerreformOne, Rockwell Group, Pepe Gascon Arquitectura, Nadaaa etc. International Architecture Awards offer 30+ Categories under three groups' i.e.; Architecture, Interior Design and Product Design.

Participate Now

The Aga Khan Award for Architecture

The Aga Khan Award for Architecture (AKAA), established by Aga Khan IV in 1977, is awarded every three years to an architectural project that meets the needs and preferences of Islamic societies. The Award seeks to identify and encourage architectural concepts in the fields of community development, area conservation, contemporary design, preservation of the environment and landscape design.

Participate

Spring Edition - 05/01/2018 - New York, Seoul, Paris & Milan

2018 Spark Design Awards Are All Underway

All the various Spark Awards are welcoming entries now. They include 12 design specialties, so there's sure to be a good fit for your work.

GLOBAL ARCHITECTURE AND DESIGN AWARDS 2018

Schedule:

Registration Begins. 15 Mar, 2018

International Architecture Awards 2018

After the huge success of previous International Architecture Awards, Architecture Podium is announcing IAA 2018. Architecture Podium created one of the largest awards in architecture and design with some of the esteemed studios as winners like Aedas, TerreformOne, Rockwell Group, Pepe Gascon Arquitectura, Morphogenesis, Dada & Partners, Nadaaa, XTEN Architecture, Mecanoo, ABIBOO Architecture and many more from across the globe making IAA one of the most successful awards.

The GQUAL Campaign, the International Disability Alliance and the International Disability and Development Consortium call upon States Parties to promote gender balance as well as quality and independence among the experts within the elections for the Committee on the Rights of Persons with Disabilities (CRPD Committee).

On June 12th, 2018, during the XI Conference of States Parties (COSP) to the Convention on the Rights of Persons with Disabilities, States Parties will elect 9 experts to the CRPD Committee.

2018
Breakthrough and Innovation
臺灣國際學生創意設計大賽
Taiwan International Student Design Competition

May.15 —— July.16

CALLING ALL DESIGN STUDENTS - ENTER TISDC TODAY!

Free to Enter | Registrations Close 16 July 2018 | Cash Prizes

We invite you to participate in the 2018 Taiwan International Student Design
Competition (TISDC), the most participated International Student Design
Competition in the world!

Te Ao Tangata
Inclusive by Design

Universal Design Conference
6-7 September 2018
Victory Convention Centre, Auckland

**Universal Design & Higher Education
in Transformation Congress**

30th October – 2nd November 2018, Dublin Castle

Transforming our World through Diversity, Design and Education

Job Openings

1. Job Opening

Bring your talent to a place where your work will fight cancer and save lives.

Sr. User Researcher– Pune, India

Varian Medical Systems is the world's leading manufacturer of medical devices and software for treating cancer and other medical conditions with radiotherapy, radiosurgery, proton therapy, and brachytherapy. The company supplies informatics software for managing comprehensive cancer clinics, radiotherapy centers, and medical oncology practices. We employ over 5,500 people who work at around the word sites in North America, Europe, and China.

Are you interested in partnering with customers to develop leading solutions for advancing cancer treatment? Do you want to collaborate with a talented group of peers who will inspire you every day? To increase our velocity, we're looking for a senior user researcher to join our user experience team in our mission to provide doctors with the means of helping patients around the world to beat cancer.

The Senior User Experience Researcher will join us in our Pune office to help us bring high-quality user experiences to our customers. A successful candidate will have experience in both design research and human factors. You will be responsible for executing a variety of user research studies to support the development and iteration of hardware and software products, as well as the advancement of customer empathy.

Job Responsibilities:

- Partner with user interface designers, product managers, and other stakeholders to identify research needs.

- Develop plans for user research activities across the product lifecycle from early stage design and product definition activities to post-release assessment.

- Understand and incorporatebusiness and technical requirements in research strategies.

- Work with product teams to define user experience goals and metrics

- Design and conduct a variety of research studies including contextual inquiry, user interviews, focus groups, task analysis, card sorting, expert reviews, design walkthroughs, formative and summative usability tests, and surveys.

- Synthesize research findings into meaningful themes and translate these results into actionable user centered design and product goals.

- Evangelize Research findings to stakeholders through written reports and oral presentations.

- Advance the user experience team's research toolbox by trying out new research techniques and deliverables.

Requirements:

- 10 + years of experience in user research with an emphasis on research related to software product design.

- Masters in Human Factors, Human Computer Interaction, Cognitive Science, or closely related field.

- Excellent knowledge of all aspects of User Centered Design process and the ability to apply them flexibly across a variety of project types.

- Experience with design control and regulatory practices and standards for medical devices or similar regulated industry is preferred.

- Extensive experience working with designers, product managers, and engineers in a fast-paced, rapidly changing environment.

- Ability to rapidly revise and improvise research plans as needed.

- Experience with Agile methodologies is a plus.

- Experience with in-lab and remote, user research tools (e.g., Morae suite, User zoom).

- Proven project management skills and track record of delivering commitments on time.

- Ability to prioritize time between multiple projects, and stay flexible with changing schedules and projects while working with multiple teams.

- A proven track record of working well with multi-disciplinary/multi-cultural teams.

- Excellent analytical ability, especially with regard to observation of user behavior.

- Strong oral and written communication skills.

At Varian, our culture is centered on fostering the creative potential of every employee through teamwork and collaboration. Touching millions of lives every day inspires us to do our best work. Start with your talent, ambition and creativity and build a career that allows you to make a difference.

Sr. Interaction Designer–Pune, India

Varian Medical Systems is the world's leading manufacturer of medical devices and software for treating cancer and other medical conditions with radiotherapy, radiosurgery, proton therapy, and brachytherapy. The company supplies informatics software for managing comprehensive cancer clinics, radiotherapy centers, and medical oncology practices. We employ over 5,500 people who work at around the word sites in North America, Europe, and China.

Are you interested in partnering with customers to develop leading solutions for advancing cancer treatment? Do you want to collaborate with a talented group of peers who will inspire you every day? To increase our velocity, we're looking for a senior interaction designer to join our user experience team in our mission to provide doctors with the means of helping patients around the world to beat cancer.

The senior interaction designer will join us in our Pune office and will focus on defining our next generation information system. A successful candidate will partner with user experience specialists, product managers ,medical practitioners and engineers around the world to solve complex clinical and business problems with simple, intuitive, yet powerful designs.

Job Responsibilities:

- Design creative solutions for web, mobile, & tablet using modern design methods in a variety of product development methodologies including agile frameworks and phase-gate approaches.

- Develop high level and detailed storyboards, wireframes, mock-ups, and prototypes to effectively communicate design concepts.

- Work closely with product management and engineering to understand and incorporate business and technical requirements in design strategies.

- Collaborate with UI architects and technical leads to negotiate design requirements and play an active role in design iterations.

- Partner with user researchers on user testing activities to understand design and usability issues and propose changes to solve them.

Requirements:

- 10 + years of experience in interaction design with emphasis on web and mobile product design.

- Masters in Human Computer Interaction, Industrial design, Human Factors or other design-related field preferred.

- Demonstrated experience with turning customer insight into interaction designs – portfolio required.

- Excellent knowledge of all aspects of user centered design process, methodology, and UI best practices.

- Excellent analytical ability, especially with regard to understanding user behavior and design theories.

- Advanced experience with design and prototyping tools such as Sketch, Axure, and Adobe CS.

- Ability to rapidly revise design concepts as needed.

- Good white boarding and co-design skills.

- Experience with Agile methodologies (Scrum, KanBan) is preferred.

- Knowledge of the software development process and ability to communicate well with software development teams.

- Great communication & presentation skills that speak to a broad range of audiences.

- A proven track record of working well with multi-disciplinary/multi-cultural teams.

- Experience working in healthcare domain with design control, regulatory practices and standards for medical devices or similar regulated industry is a plus.

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You're just one click away from the most impactful work you'll ever do.

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