

Event Summary Spring 2022

Creating real world solutions to issues in healthcare environments, and for people with varying abilities



MEDICAL & ACCESS TECHNOLOGIES – IdeaLab #19

Marketing poster

A HYBRID COLLABORATIVE EVENT

Leadership, planning & organizing

- Dan Harel, IdeaLab lead
- Dana Wolcott, lead innovation coach
- Dr. Dan Phillips, accessibility chief
- Aaron Burton, Sr. Director of Emerging Technology, RRH

Contact

- Brandy Madera, marketing manager
- bsmvpr@rit.edu

Information

<https://www.rit.edu/research/simonecenter/ideallab>



Albert J. Simone Center for
Innovation and Entrepreneurship



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About IdeaLab

A program designed to link unique challenges with creative and technical problem solvers at RIT. The goal of IdeaLab is first and foremost educational. This fast-paced event emphasizes a multidisciplinary, collaborative process, and provides an opportunity for students to practice it under the guidance of experienced faculty and industry experts.

The results, therefore, are viewed in the context of learning, and not as professional industry solutions. As such, we value the students' efforts to take on real world problems and to immerse themselves in the creative problem solving methodology.

IdeaLab is focused on addressing accessibility and medical challenges and is supported by institutions such as Al Sigl Community of Agencies, Rochester Regional Health (RRH) and others. It is held twice a year over one weekend.

RIT provides a number of options for the participating students to continue developing their concept solutions using design, technology and business tracks, as well as potentially starting new businesses.

About this event: IdeaLab #19

February 12 – 13, 2022 / A HYBRID COLLABORATIVE EVENT

Event statistics:

- 70 registered students
- 8 coaches
- 12 client-experts
- 4 Simone Center
- A few unregistered guests

Final presentation:

- 33 student participants
(47% participation rate)

This IdeaLab included 4 accessibility challenges submitted by AI Sigl, one accessibility challenge from Endless Highway, and 3 healthcare related challenges submitted by Rochester Regional Health). It was conducted in-person for the first time in about two years due to the COVID pandemic and resulting RIT restrictions on large gatherings. Regardless, all teams benefited from the experience of our client experts that joined them (some remotely).

In this fast paced event we've encouraged the participating students to transform their concepts into 3D prototypes. These activities using foam core, 3D printing and other techniques resulted in closer teamwork as well as better understanding of the problems needing solution. The prototypes included one wireframe solution for a healthcare related interface app.

The event aimed at providing a fantastic educational experience for all interdisciplinary student teams working together to solve real-world problems. We believe this aim was achieved despite a relatively low rate of participation.

Dan Harel,
Adjunct Professor of Industrial Design
College of Art & Design
IdeaLab Lead & Advisor | Strudio-930 Manager
Simone Center for Innovation & Entrepreneurship

Event structure

IdeaLab disclaimer signed by all participants

"Please remember that the IdeaLab is for brainstorming and, as a result, all ideas and concepts are iterated, borrowed, and shared among participants. Everything is open to all."

GENERAL SESSION INTRODUCTION

Welcome students, coaches, client-experts & guests

- A brief overview of Design Thinking methodology principles
- An overview of examples of past projects that were further developed by RIT students
- Instructions for final presentations
- A review of event expectations

Warm-up session

An hour-long fun ideation session aimed at orienting and preparing the participating students for their tasks in research, ideation and design during the event.

Breakout rooms

Client-expert presentations

Each of the problem areas is represented by an expert from the supporting organization. They explain the challenge and respond to questions from the student teams, then remain available to their respective teams for the duration of the event.

The challenge for each team

A conceptual solution to the challenge delivered in a 10-15-minute presentation.

GENERAL SESSION CONCLUSION

Student presentations

The event is concluded with each team presenting their concept for the problem assigned to them to the entire group (students, coaches, client-experts and guests).

Event conclusion and Simone Center message to all participants

Event evaluation (students, coaches and client-experts)

Preliminary debrief (coaches and client-experts)

Support organizations

Simone Center

- Dr. Richard DeMartino, Director, Simone Center
- Dr. Dan Phillips, AccessAbility Chief
- Rupa Thind, Finance
- Brandy Madera, Marketing
- Dana Wolcott, Lead Innovation Coach
- Dan Harel, Lead IdeaLab/Studio-930

Client representatives

Rochester Regional health (RRH)

- Aaron Burton, Sr. Director, Emerging Technology

Al Sigl, Community of Agencies

- Peggy Fortune, Marketing Coordinator
- Tom Thomas M. O'Connor, President

Endless Highway, Inc.

- Caralie Fennessey, C.T.R.S, Operations/Communications Director
-

Faculty coaches/client-experts

	Coaches	Challenge	Client experts
• Team 1	Dan Phillips	Mobile transfer bar	Peggy Fortune, Al Sigl PFortune@alsigl.org Tom Fletcher via Zoom
• Team 2	Lara Goulart	Accessible self-checkout	Peggy Fortune, Al Sigl PFortune@alsigl.org Frank Seiler, Al Sigl
• Team 3	Gerry Garavuso	Anchoring a wheelchair to the floor of a van	Peggy Fortune, Al Sigl PFortune@alsigl.org Chris Hilderbrant childerbrant@rochesterspinalassociation.org Vaughn Pembroke via Zoom
• Team 4	Mindy Magyar	Accessible lavatory for wheelchair users at flight	Peggy Fortune, Al Sigl PFortune@alsigl.org Jeiri Flores via Zoom
• Team 5	Kim Sherman	A wheelchair mounted easel	Caralie Fennessey, Communications Director, Endless Highway caralie@endless-highway.org Mike Messenger
• Team 6	Don Pophal	Baby Face	Paula Sedita, paula.sedita@rochesterregional.org Aaron Burton, Sr Director of Emerging Technology, RRH
• Team 7	Walter Bubie	Patient education prior to surgical procedures	Katrina Lorenzetti, katrina.lorenzetti@rochesterregional.org Michelle Beatty, michelle.beatty@rochesterregional.org Aaron Burton, RRH Aaron.Burton@rochesterregional.org
• Team 8	Aaron Burton	Safe use of opioid prescription and monitoring	Aaron Burton, RRH Aaron.Burton@rochesterregional.org

Event feedback

Feedback by students,
faculty coaches and
client-experts

Positive (Students)

- This was an excellent opportunity for me! Collaboration with different disciplines and levels.
- Very satisfied with overall experience, presentations, process & schedule, food, and the collaboration with multiple disciplines.
- The open format of work scheduling and constant oversight of an experienced coach made the event fun and not too stressful.
- We liked doing this event in person better than online.
- It was a very valuable experience to meet with real world clients.
- It was very interesting to work with people from many different years and majors.
- The deciding factor when choosing to participate in IdeaLab was Richard DeMartino who spoke to my career planning class and I signed up because I feel like I am not doing anything with my life.
- I absolutely loved this opportunity and will be sure to come to the next one.

Positive (Faculty coaches and client-experts)

- Vaughn Pembroke (client-expert) had good time, zoomed from Florida
- There was a good mix of students/disciplines for good collaborations
- Moe's food was excellent
- Five wheelchairs were very helpful
- Challenges with moving forward potential, or that students expressed a desire to continue development:
 - Team 2, Accessible check-out
 - Team 7, Patient education prior to surgical procedures
 - Team 8, Safe use of opioid prescription and monitoring
 - Team 5, A wheelchair mounted easel

Event Improvement suggestions

Feedback by students, faculty coaches and client-experts

Improvements (Students)

- Past participants should be allowed to skip introduction and begin work.
- I personally didn't like the task our group worked on, and was very lost in the project expectations/ presentation. Our group had a few people who had issues communicating.
- Release the schedule and meeting times sooner.
- The design process presentation was both very long and very rushed.
- The team presentations varied in quality.
- We were down about 5 teammates, but still had a great time with the people who could make it. I think people weren't too interested in our topic, so they just didn't show up.
- I prefer a weeklong event (1 person).

Improvements (Faculty coaches and client-experts)

- The hybrid presentations (in-person and online via zoom) are difficult and cumbersome.
- Have collaborations go both ways, RIT to AI Sigl and AI Sigl to RIT (Frank Seller).
- Next time bring water and coffee.
- Smaller teams are better (3-4 students).
- Organize IdeaLab as a competitive event. Select best 3 for potential continuation based on criteria (Lara).
- Establish an AI Sigl presence on campus or bring the Liveability Lab to campus.
- Plan social and other events together with AI Sigl.
- Ask Mike Bufalin to act as an advisor to teams on prototype production (continue to prepare material/tool kits).
- The "knowledge" you collect from these post mortem sessions along with your expertise (and Dana's, Dan's etc.) should be captured in an RIT Wiki. (Walter)
- I would like to learn more from the coaches, as mentors, as sources for tips on running a team. (Walter)
- I think there should be a handout of a plan with recommended timeboxes for key Design Thinking steps. A handout so that each team member can have in front of them a sense of where to go, how to divide up the time, respect each design process step. With breaks in places (so that team members aren't leaving during key design work). This plan could have a checklist, too, helping teams think through materials they might need for prototyping, model making, charting, etc. (Walter)
- Sponsors need to have instructions for getting onto RIT's guest WiFi. I felt that it took much extra effort/ help to figure this out. A card on the tables with instructions might suffice. (Walter)

Event photos



Student presentations

The goal of IdeaLab is first and foremost educational. The results, therefore, are viewed in the context of learning, and not as professional industry solutions.

This is a fast-paced event with limited opportunity for direct feedback to final presentation during the event (post event feedback is practiced and welcomed)

Please refer to "About IdeaLab" on page 3

The following pages reference the concept solutions developed by the students.

For more details please refer to the original team presentations.

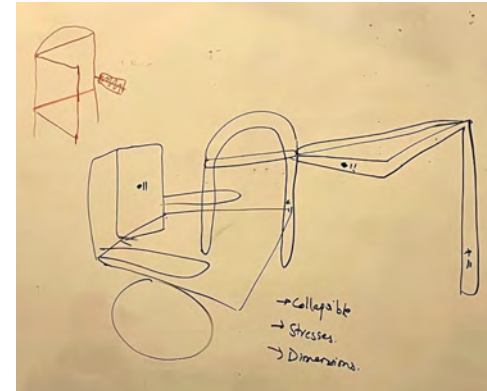
Mobile transfer bar

Submitted by Al Sigl

Challenge statement

Tom, who uses a wheelchair and has Cerebral Palsy (CP) needs a support device (mobile bar), so he can safely transfer himself into bed (with a metal bed frame), and other places. The bar needs to be sturdy to support his weight, be able to fit into small spaces, and portable as he will be taking it from room to room particularly the bedroom and the bathroom.

- Abigail Abraham, CET, aa1700@rit.edu
- Alex Scott, CET, as9362@rit.edu
- Jeremy Lau, CET, jd16599@rit.edu
- Faculty coach: Dan Phillips, dbpeee@rit.edu
- Client-expert: Tom Fletcher via Zoom



Accessible self-checkout stations

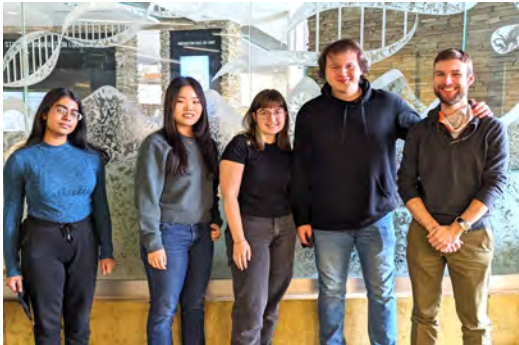
Submitted by Al Sigl

Challenge statement

There are many challenges wheelchair users face when grocery shopping that cost them a lot of energy and make it difficult for them to navigate independently.

How might we design a solution that minimizes those challenges and prioritizes saving energy in order to facilitate independence for wheelchair users?

- Leora Mouli, College of Engineering, ltm2035@rit.edu
- Yichen Wu, CAD, yw1856@rit.edu
- Emma Williamson, CAD, ecw7627@rit.edu
- Murat Barış Meşe, College of Engineering, bm5138@rit.edu
- Andrew Colautto, College of Engineering, aec2725@rit.edu
- Faculty coach: Lara Goulart, lcfaa@rit.edu
- Client-expert: Frank Seiler, Al Sigl



Anchoring a wheelchair to the floor of a van

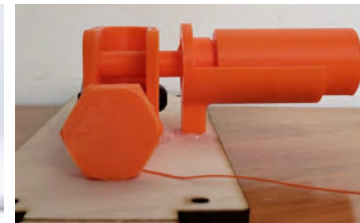
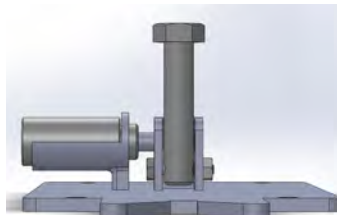
Submitted by Al Sigl

Challenge statement

The problem exists when a person using a wheelchair drives a van and needs to easily lock its location so that it becomes a driver's seat. The challenge is the lack of ability to move their bodies to reach and lock oneself as well ability to fix a wheelchair in place.

Many different wheelchairs would need to be identified and studied based on the height, depth and location of the wheel from the front to back. Stress analysis would also need to be performed to verify that the system meets all safety requirements.

- Zachary Slater,
- Chase Kahn,
- Audrey McIntosh,
- Steven Miller II,
- Shane Webster,
- Toluwalase Ajani
- Faculty coach: Gerry Garavuso, gxgddm@rit.edu
- Client-expert:
 - Chris Hilderbrant
childerbrant@rochesterospinalassociation.org
 - Vaughn Pembroke via Zoom



Accessible lavatory for wheelchair users at flight

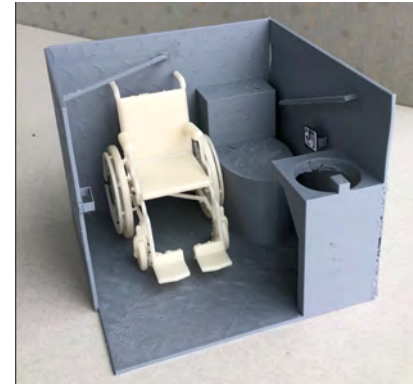
- Elisa Renerts, CAD, epr4228@g.rit.edu
- Decker Ayers, MAD, dra2214@rit.edu
- Brent Shaub, SOIS, bs8612@rit.edu
- Theodore Nolan, EMET, Tn5847@rit.edu
- Vinit Naik
- Faculty coach: Mindy Magyar, mxmfaa1@rit.edu
- Client-experts: Jeiri Flores

Submitted by Al Sigl

Challenge statement

How can airplane lavatories be made more accessible for individuals using wheelchairs who need more space than others?

Team added: The solution should focus less on limited bathroom size and more on the *needs of the user*, both physical and psychological.



A wheelchair mounted easel

Submitted by Endless Highway

Challenge statement

An easel is a useful tool for many wheelchair users and their recreation therapists as they offer both art therapy and nature-based therapy. While easels that sit on tables are easy for wheelchairs to roll up to, many programs are run outdoors or on-the-go. For example, a rec therapist might take a nature walk with a book or worksheet for the kids to do along the way. Another example is a trip to the museum where kids might have worksheets or small art projects to complete. A portable, attachable easel solution for projects on-the-go would be helpful to address these needs in a variety of areas.

- Maxwell Snow, CAD,
- Freya Fang, CAD,
- A. H. Fernando, COS,
- Margaret Stafford, CAD,
- **Faculty coach:** Kim Sherman, klsfaa@rit.edu
- **Client-expert:**
 - Caralie Fennessey, caralie@endless-highway.org
 - Mike Messenger



Baby face

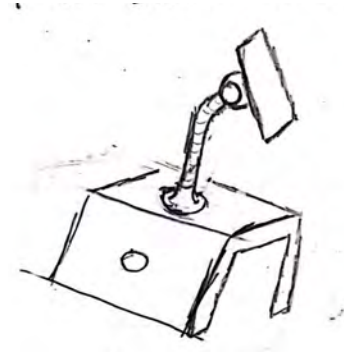
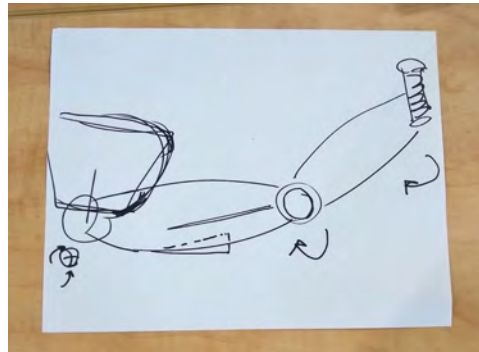
Submitted by Rochester Regional Health (RRH)

- Matthew Incardona, H-Centered Computing, mpi7253@rit.edu
- Ethan Schnittert, MET, ers8388@rit.edu
- Faculty coach: Don Pophal, dwpddm@rit.edu
- Client-expert: Paula Sedita, paula.sedita@rochesterregional.org

Challenge statement

It is difficult for a mom to see her infant's face when holding her skin to skin (kangaroo care) as this method forces the baby's head the opposite direction. The method is beneficial for both and strongly encouraged, however, moms often choose not to use it because they cannot directly interact with their infants.

How might we design a solution that allows a mother to see her baby's face while holding her skin to skin?



Team 7

- Bevins Tuesimi, Intl. Business & Finance, bot9203@rit.edu
- Catherine Nemechek, HCI, cm4802@rit.edu
- Nathanael Thomas, Cybersecurity, ndt3511@rit.edu
- Pratheep Chelladurai, HCI, pc9099@rit.edu
- Daechan Kim, Industrial Design, dk9919@rit.edu
- Faculty coach: Walter Bubie, wcbics@rit.edu
- Client-expert:
 - Katrina Lorenzetti, katrina.lorenzetti@rochesterregional.org
 - Michelle Beatty, michelle.beatty@rochesterregional.org



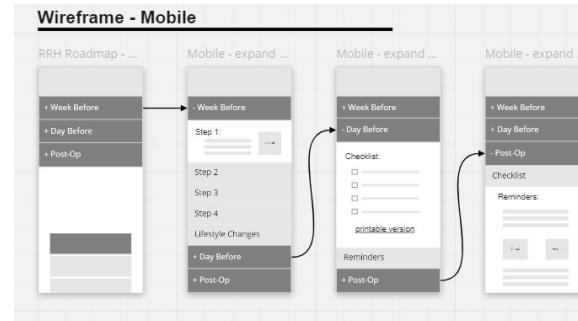
Patient education prior to surgical procedures



Submitted by Rochester Regional Health (RRH)

Challenge statement

How do we deliver highly visible educational information for patients who are going to undergo planned surgery?



Safe use of opioid prescription and monitoring

Submitted by Rochester Regional Health (RRH)

Challenge statement

Healthcare providers struggle to meet the guidelines for safe opioid prescribing and monitoring. An improper practice can lead to an addiction problem. How might we design a solution to help in the monitoring and prevention of misuse.

- Alyssa Tenny, CAD, amt1319@rit.edu
- Sandra Lwin, KGC OE, sl3226@rit.edu
- Sagar Modale, CET, sm1522@rit.edu
- Faculty coach: Aaron Burton, burton2065@gmail.co
- Client-expert: Aaron Burton, burton2065@gmail.com

