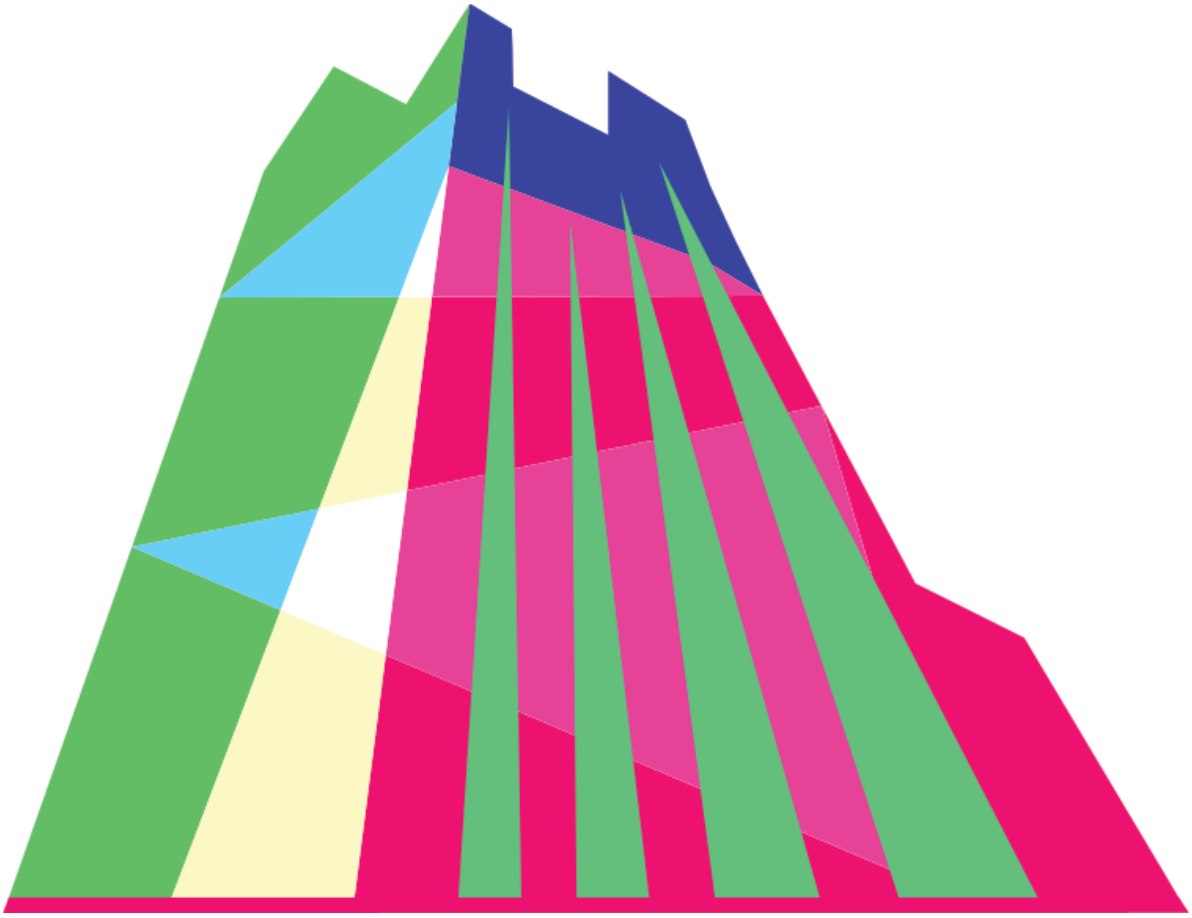

Pitt Challenge 2019

COMPETITION BOOKLET

www.pittchallenge.com

PITT CHALLENGE | 2019

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PIL.LAB Producers of Pitt Challenge 2019

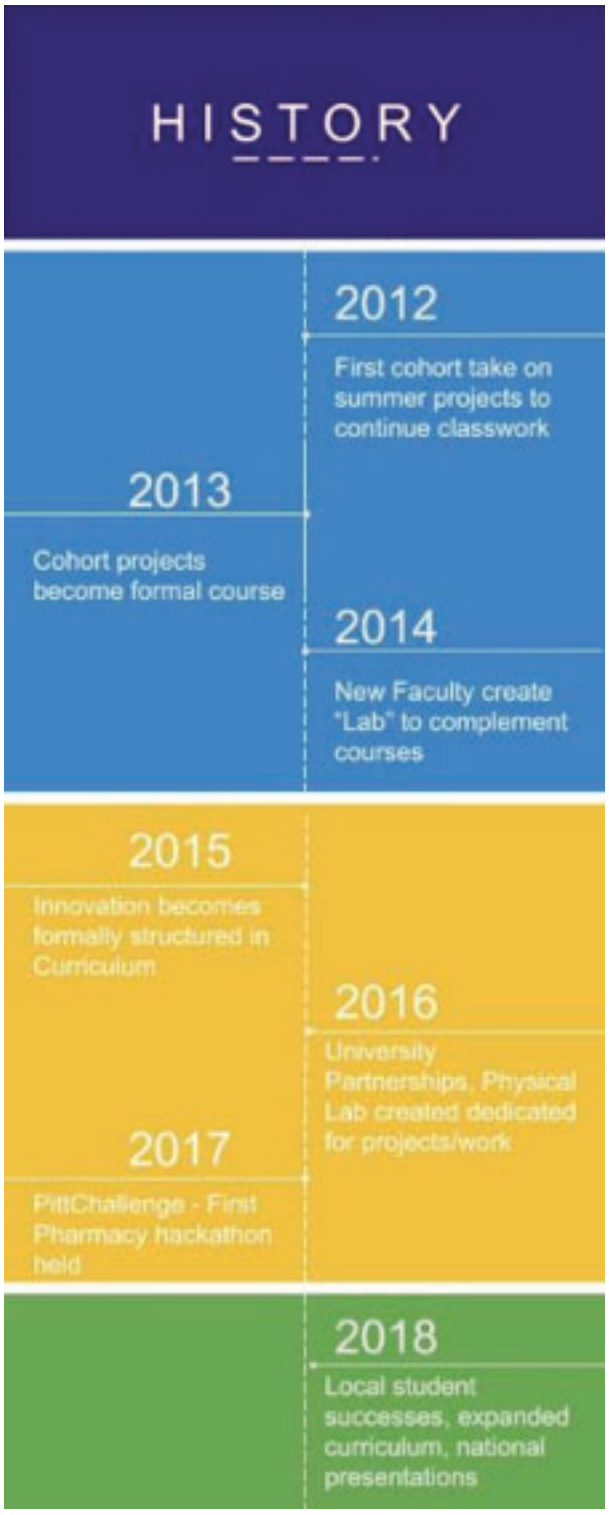
PILLAB
Reimagine Pharmacy

Who are we?

We are the Pharmacy Innovation Lab (PIL.LAB), the innovation center of the school of pharmacy. We reimagine healthcare through our students, faculty, and projects - including the Pitt Challenge 2019

Our Story

The Pharmacy Innovation Lab is a think tank solving pharmacy's problems of tomorrow, today. We're re-imagining pharmacy. Originally started as a course, "Contemporary Issues in Pharmacy" evolved from group discussions about current issues, problems, and solutions to a setting where practical application is used to address these topics in the "Pharmacy Innovation Lab" (PIL). Today, the PIL is an association of School of Pharmacy faculty/students, others University of Pittsburgh School students, retail chains, hospitals, long-term care pharmacies, and patients working together to identity problems and innovate solutions.



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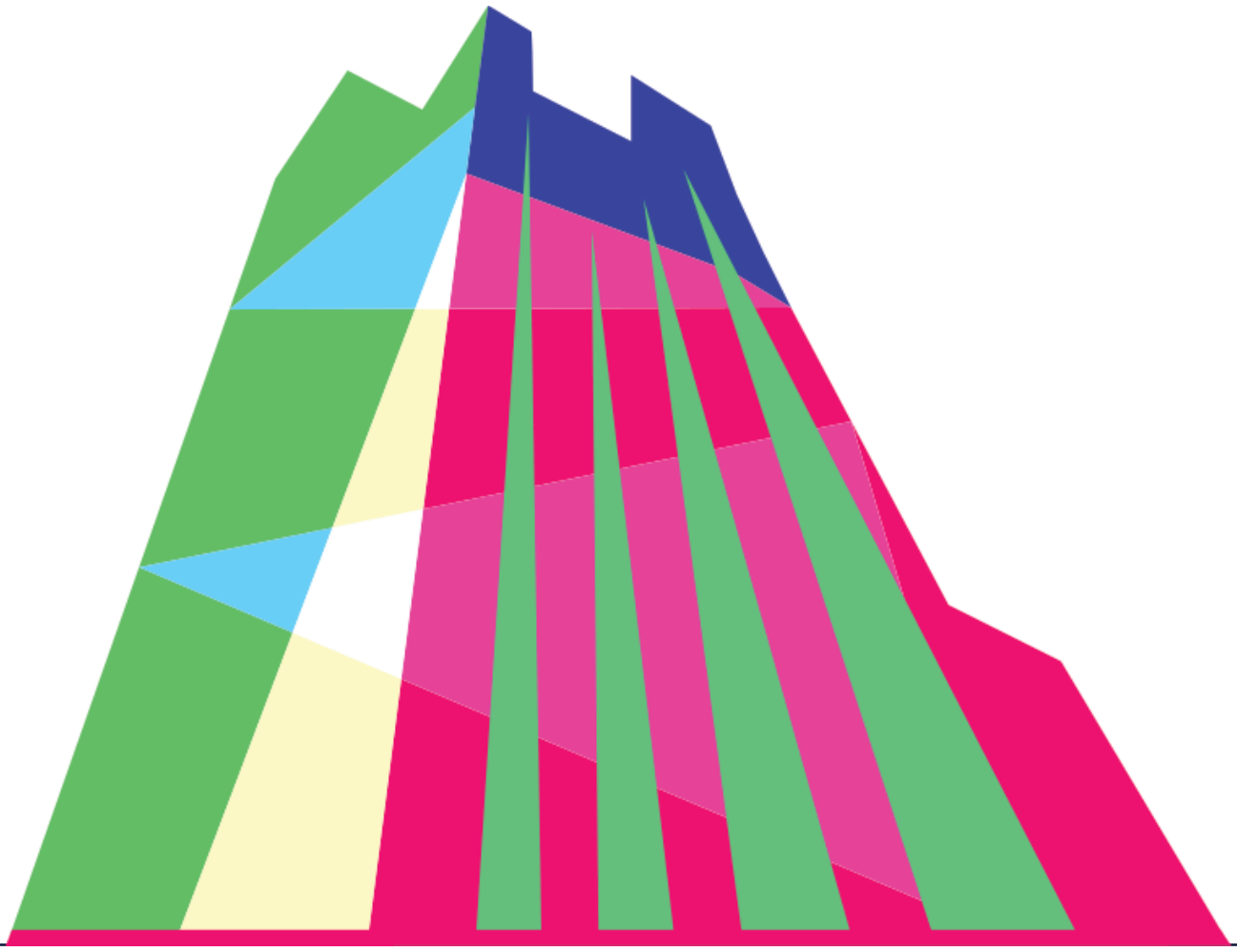
Our Mission Expedite healthcare innovation through experience and network

Our Vision A world where healthcare is a leading industry in technology innovation



Why are we passionate about healthcare innovation?

We believe there are two problems:

1. The "Network Chasm"
It separates innovators and healthcare providers for lack of knowing eachothers' full capabilities.

2. The "Complexity Gap"
The challenges we face in healthcare are not as obvious as most people think.

The Pitt Challenge offers students the opportunity to tackle these issues.

Through our 24-hour hackathon, students are creating the next innovations in healthcare and technology.

120 total participants
94 ***computer science*** students
26 ***healthcare*** students
31 final team ***submissions***
16 academic institutions
9 states **2** countries

Production Team Pitt Challenge 2019

Pitt Pharmacy Faculty & Staff

Ameer Ali
ameer.ali@pitt.edu
PharmD
Faculty, Director

Ravi Patel
ravipatel@pitt.edu
PharmD
Faculty, Co- Director

Matt Freidhoff
mjf49@pitt.edu
Staff
Operations Mgr

Pharmacy Students

Spencer Schlecht
sgs38@pitt.edu
Student Lead

Fourth year student pharmacist on the pursuit towards empowering individuals to lead healthy, autonomous lives through tech and creativity

Dan Shrum
danschrum@pitt.edu
Student Co-Lead

Fourth year student pharmacist pursuing a career in critical care and infectious disease blended with leading the field in innovative technologies

Adam Patrick
adam.patrick@pitt.edu

Fourth year student pharmacist dedicated to improving patient outcomes through the use of evidence-based medicine in the clinical pharmacy setting

Colin Pfeiffer
cmp132@pitt.edu

Third year student pharmacist focusing on digital health technologies and international pharmaceutical

Brooke Kulusich
bek69@pitt.edu

Second year student pharmacist interested in pharmacy law, regulatory affairs, and business innovation

Computer Science Students

Roisin O'Dowd
roisinodowd@pitt.edu
Alumna

Software engineer interested in improving medical care and furthering biomedical research through the use of technology

Justin Kramer
jpk91@pitt.edu
Junior

Software engineering student looking to innovate in the healthcare sector and make an impact

Steven Barash
stevenbarash@pitt.edu
Senior

Fourth year Information Science student and software engineer interested in UI/UX, front end, and mobile development

Torrey Trahanovsky
tnt29@pitt.edu
Junior

Third year Information Science and Business Supply Chain Management double degree student, focused on Innovation Labs in the corporate setting

Josh Arabia
josh.arabia@pitt.edu
Junior

Junior studying computer science with a focus on video game design and production

Past Participant Highlight Pitt Challenge 2019

Past participant Collin Wolf shares his journey from the 2017 Pitt Challenge where he first sparked the idea for Cassian Case to the success he has seen as a business owner today.

Then

"From having my first experiences working in specialty pharmacists, the problem of having pharmacists spend a lot of their time on the phone like a telemarketer is ripe for innovation and improvement. Our first prototype involved ripping off the heads of Pez dispensers and making a phone case jammed with altoids to demonstrate the idea."

Now

"Now we have a functional product used in patient studies for HIV Prophylaxis. We also have a software platform that automates patient data collection and pharmacy workflows which we are commercializing today."

Award Summary Pitt Challenge 2019

First Place	**Second Place**	**Third Place**
Cash prize of $3000	Cash prize of $2000	Cash prize of $1000

Interactive Health Kiosks
Amazon Fire Tablets

Virtual Medical Simulation
Leap Motion Controller

Medical Education Game
Classic NES and ega Genesis Game Systems

Big Data
500GB External SSD

Remote Patient Interaction
Google Home Hub

Electronic Health Records
Rocket Notebook

Tech and Mental Health
One year subscription to Headspace

Improved Dictation
TT Easy Trans Smart Language Translator

Best UiPath Automation Hack
UiPath/MLH Backpack

Best Use of Google Cloud
Google Home Minis

Best Domain Registered with Domain.com
Domain.com Backpack

Best Use of MongoDB Atlas
Brand MongoDB AirCharge Plus

To view all project submission presentations, visit: https://drive.google.com/open?id=1Q-8A0jotvOz5ti9NrPX2dzFk9kZUCUjJ

First Place Pitt Challenge 2019

ZeroDecay

ZeroDK

Devpost: *https://devpost.com/software/zerodk*
Watch Presentation: *https://drive.google.com/open?id=1yAwQwtNbPVt7aV3aX-526Vo0GTEJ7Xu80*

"We're the Progressive Snapshot for dental hygiene and enable insurance providers to quantify real-time individual risk for dental disease while enabling end users insights into to their oral care habits. We did this by creating a toothbrush and dental floss holder. This smart device can track the time and date you used each item and for how long."

First Place Team Member Profiles

Sohail Rana | 3rd Year Dental, University of Pittsburgh
smr140@pitt.edu
Major: Doctor of Medicine in Dentistry
Other skills/languages: Learning Arabic
Dream job: Dental Entrepreneur
Favorite hobby: Working on Cars, traveling, and reading

Maxwell Shaginaw | Senior, Penn State University
mcs5742@psu.edu
Major: Computer Engineering
Other skills/languages: MATLAB, VHDL
Favorite hobby: rock climbing

Tyler St. Amand | Freshman, Penn State University
stamandtyler@gmail.com
Major: Software engineering
Other skills/languages: Basic C++, C#, HTML, CSS, JavaScript, Python
Dream job: C# Backend Developer
Favorite hobby: Playing a full drum set

Muntaser Syed | 2nd Year PhD, Florida Institute of Technology
mysed2011@my.fit.edu
Major: Computer engineering (ML and Wireless sensors)
Other skills: programming, cyber security, IoT, AI, Blockchain
Dream job: Head R&D scientist at Google/Microsoft/Amazon or a national laboratory
Favorite hobbies: Music (play guitar and bass), Hackathons

Andrey Popkov | Graduate Student, University of Pittsburgh
aap102@pitt.edu
Major: MS Management Information Systems
Other skills/languages: Startup of products/departments/companies, Project management, Business processes optimization, Budgeting and finance control, Marketing strategy and tactics, Broad technology knowledge, Russian
Dream job: Complex IT project department director
Favorite hobby: Traveling

Second Place Pitt Challenge 2019

Simpl

Devpost: *https://devpost.com/software/simpl-8bgmzn*
Watch Presentation: *https://drive.google.com/open?id=109YW5gOW9ynT86c132UC8eBsWue-FOoBR*

"Using Computer Vision to analyze your motor patterns in real-time, SimpL analyzes your joints in order to gather information about how you move. SimpL gives auditory feedback as perform physical therapy exercises and workouts. Using biometric analysis, SimpL helps diagnose patients with muscular imbalances as well as treat patients when the presence of a healthcare professional is not around."

Team Members

Andy Kong | Sophomore, Carnegie Mellon University
akong@andrew.cmu.edu
Major: Computer Science
Other skills/languages: Chinese, Juggling, Python
Dream job: Technical founder of a wearable device startup

Aashai Avandhani | Sophomore, Carnegie Mellon University
aavadhan@andrew.cmu.edu
Major: Statistics and Machine Learning/Software Engineering
Other skills/languages: NLP, Python, Java, Data Science
Dream Job: Using programming/data analysis to better the lives of others

Kunal Gandhi | Junior, University of Pittsburgh
kunalgandhi99@gmail.com
Major: Neuroscience and Computer Science Majors
Other skills/languages: English, Mandarin Chinese, Gujarati, Java, Python, R, Matlab
Dream Job: Finding the intersection between health and technology

Third Place Pitt Challenge 2019

SiMMan

Devpost: *https://devpost.com/software/sim-man-pbvegm*
Watch Presentation: *https://drive.google.com/open?id=1Mgq1_0wOpeCLkLoe1y-i3OUUHZu5G2B_8*

"Team siMMan's project is a virtual reality surgery simulator aiming to streamline surgery simulation creation and expansion. The simulation focuses on the ability to import surgery scenarios in a virtual environment for teaching and practice settings. These scenarios can be made extremely accurate by using image processing technology on MRI and CT scans in order to convert them to 3D models for the simulations."

Team Members

Jacob Puckowitz | Senior, University of Pittsburgh
jsp64@pitt.edu
Major: Mechanical Engineering
Other skills/languages: ANSYS, computer modeling
Dream Job: Design oriented engineering

Jacob Shrubb | Senior, University of Pittsburgh
jas558@pitt.edu
Major: Statistics and Machine Learning/Software Engineering
Major: Mechanical Engineering
Other skills/languages: SolidWorks, Fusion360, Blender, Python, Matlab
Dream job: Design Electric Vertical TakeOff and Landing (E-VTOL) vehicles

Jarod Vickers | Senior, University of Pittsburgh
jav88@pitt.edu
Major: Computer Engineering
Other skills/languages: I once knew Spanish. Now I speak Java.
Dream job: Something in hockey/football management or player recruiting

Hervé Nyemeck | Senior, University of Pittsburgh
hervenyemeck@gmail.com
Major: Mechanical Engineering
Other skills/languages: Python, JavaScript, Improv, French
Dream job: Owner of a BnB in Scotland, or coffee shop in the south of France

Track Winners Pitt Challenge 2019

Interactive Health Kiosks

Kare Kiosk | Vincent Occhiogrosso (occhvs@farmingdale.edu)

A portable modular health monitoring kiosk that enables the user to update health records

https://devpost.com/software/kare

Virtual Medical Simulation

July Affect | Olivia Wininsky (Onw5@pitt.edu)

Roman Kasparian (RVK6@pitt.edu), Collin Abidi (cba15@pitt.edu)

Reduce mortality rates in hospital during training season by training med students to be used to respond to notifications and remember to deliver care

https://devpost.com/software/july-effect

Medical Education Game

Kapow! | Zach Lynn(Zach.lynn10@gmail.com) & Ilana Udler (iyu1@pitt.edu)

An interactive way to log seizure patterns for children

https://devpost.com/software/kapow-8oi0ft

Big Data

Snack Check | Kenan Rustamov (ker108@pitt.edu), Elijah Kajinic (elk75@pitt.edu)

A new, responsive mobile application that seeks to accommodate a wide array of dietary preferences and restrictions when offering recipes

https://devpost.com/software/medical-tracker

Remote Patient Interaction

Meditrace | Abhinav Mamidipaka

An app that logs symptoms as they are experienced in real-time

https://devpost.com/software/medical-tracker

Electronic Health Records

GoHabit | Charlie Yang(haoy2@illinois.edu), Takumi Li (feiyang3@illinois.edu)

The behavioral change platform that boosts employee health and promotes business success

https://devpost.com/software/gohealth-xwyflj

Tech and Mental Health

StressOS | Emily Novak (emilynovak@pitt.edu), Anna Shafer (ars216@pitt.edu), Andrew Dant (agd25@pitt.edu), Dan Farquhar (dbf5118@psu.edu)

A biofeedback app to use while performing a deep breathing exercise to combat stress and elevated blood pressure

h https://devpost.com/software/stressos-3m70st

Improved Dictation

HelpMe | Richard Rosenthal (richard.rosenthal@acd.ccac.edu)

A voice app that offers a more affordable replacement to life alert

https://devpost.com/software/alexa-first-aid-kit-3tfscw

Major League Hacking Awards Hackathon 2019

MongoDB

Neurocare | Megan Ung (ung.meg@gmail.com), Stephen Price (sprice1@andrew.cmu.edu), Serano Tannason Ng (stng@andrew.cmu.edu)

A suite of digital biomarkers to measure neurocognitive decline

https://devpost.com/software/neurocare

Domain.com

Bugs vs Drugs | Neha Hafeez (neh43@pitt.edu74), Vaidehi Patel (vaibhavmishu@gmail.com), Catherine Pressimone (cap128@pitt.edu)

A clinical microbiology teaching game that reframes medical education into an interactive scenario driven game to teach students how to diagnose and treat patients presenting with various infectious diseases

https://devpost.com/software/bugs-vs-drugs-a-clinical-microbiology-teaching-game

Google Cloud

Ellie | Andrew Gagen (amg285@pitt.edu), Madelyn Frank (mef108@pitt.edu)

A mental health chatbot app that reaches out to you and can send your mood data to your therapist

https://devpost.com/software/ellie

Uipath

Meditrace | Abhinav Mamidipaka

An app that logs symptoms as they are experienced in real-time

https://devpost.com/software/medical-tracker

Other Submissions Hackathon 2019

Aware | Robert Kwiat (rek78@pitt.edu), Sridhar Reddy Velagala (Srv28@pitt.edu)
An iOS application that provides instant feedback for whether a skin growth is cancerous, facilitating early detection

Blossom | Alexis Mingey (aem110@pitt.edu), Annalisa Nguyen (Aln71@pitt.edu), Yu Sun (yusun31tc@gmail.com), Victoria McCrary (Bhero122@gmail.com)
Personalized monthly adherence packaging and delivery service based on scheduled lab values, routine patient reported outcomes, and chronic disease state management tools

Cool Document Analyzer | Joshua Lane (Jtl56@pitt.edu), Calvin Yu (cay44@pitt.edu), Matthew Wojtowicz (wojtowicz.m@husky.neu.edu), Jason Chukwu (Juc80@pitt.edu)
Allow people to more easily understand their medical records

CPR Hero | Robert Xu (Rox5@pitt.edu), Spencer Miller (sdm74@pitt.edu), Ryan Yang (cxy99@mit.edu)
A simple game that introduces kids to CPR

Disease Sim | Gabe Balannik (gib24@pitt.edu), Zhixiang Teoh (zht17@pitt.edu), Sean Shmulevich (szs23@pitt.edu)
A single player disease spread simulator

HeelHeal | John Ng (ngjohn15@gmail.com), Alan Shen (alshen@unm.edu)
An app that analyzes a user's foot image to determine the healing rate and medical suggestions

Helpful Bear | Karen Haberbusch (kah277@pitt.edu), Shelby Vanvliet (slv33@pitt.edu), Elizabeth Jones (ebj8@pitt.edu)
Bear is here to help! He wants his friends to stay happy and healthy, so he likes to check up on them every once in a while. This game teaches kids the importance of physical and mental health.

Live It | Abilash Subbaraman (asubbara@andrew.cmu.edu), Hariharan Ramasubramanian (hariharr@andrew.cmu.edu), Harshine Visvanathan (hvisvana@andrew.cmu.edu)
An interactive game which guides and educates you towards a healthy you, assigning personalized characters and scenarios

Mindful Browsing | James Brennan (jtb117@pitt.edu), Allie Walker (anw89@pitt.edu), Ben Rucker (brucker117@gmail.com), Ben Nathanson (hvisvana@andrew.cmu.edu), Zach Grimaldi (zpg6@pitt.edu)
A Chrome extension that empowers users to browse the internet safely by proactively tagging search results known to be toxic, false, or misleading

Other Submissions Hackathon 2019

ML Stim | Joey Kilgore (joey.a.kilgore@gmail.com), Brian Xiong (Bxiong1000@gmail.com), Adam Savel (Adam.Savel@rockets.utoledo.edu)
Hardware that uses machine learning to optimize electrical stimulation to block pain

Pill Identity | Halmon Lui (luih@wit.edu)
Identifying pills from your cabinet for people who have difficulty seeing

PittCare | Vaibhav Shrivastava (vaibhavmishu@gmail.com)
Blockchain based system for tracking patients; prescription records

Preemptive Disease Screenings through EHRs | Elexie Munyeneh (emunyene@uncc.edu)
An app that performs batch scanning on EHRs to reduce costs in healthcare and prevent nationwide breakouts or hidden conditions

Rx Guardian | Jeffrey Onyeador (jeo39@pitt.edu), Raja Krishnaswamy (Rjthescholar@gmail.com), Philip Matthew (ptm18@pitt.edu)
Reduce preventable adverse drug events by providing a path for simple and accurate communication of medication lists to occur

Sched 'It | Carattica Harben (cara.harben@gmail.com), Heather Dillman (HLD42@pitt.edu), and Jasmin Lizardo (jcl96@pitt.edu)
A medical scheduling tool for the Google Assistant with Google Calendar integration that makes scheduling a doctor's appointment as easy as saying, "Hey Google!"

Sitting Companion | Wen Guangxue (Guw16@pitt.edu), Wu Yue (yuewu9512@gmail.com)
An app that monitors incorrect sitting posture and reminds you via a notification

Xwait | Joseph Monaco (jcm132@pitt.edu), Shane Seager (sjs193@pitt.edu), Gianna Emmett (GME20@pitt.edu), Darius Ramavarapu (Drr52@pitt.edu)
A platform that shows how long the wait time is during walk-in hours at student health

Addendum A Judging Criteria Matrix

1. **Technical complexity achieved** - How ambitious was the project and how much did they complete?

Too simple		Too ambitious and failed			About right for 24 hours		Very technically skilled		Weeks of work in 24 hours
1	2	3	4	5	6	7	8	9	10

Total multiplied by 3 =

2. Was the **problem** clearly defined with a direct link to a user pain (empathy and clarity)?

Confusing				Understands problem and is clear			Deep knowledge of problem		100% clear
1	2	3	4	5	6	7	8	9	10

Total multiplied by 2 =

3. **Creativity** - Does the solution attempt to solve the problem in a novel way?

Basic solution		Light modification from current standard		New solution	New and it makes a lot of sense			Extremely novel knowledge and connection	
1	2	3	4	5	6	7	8	9	10

Total =

4. **Simplicity** - How practical is the solution as it pertains to the end user?

Very complicated				Elegant and very easy to adopt
1	2	3	4	5

Total =

5. **Value** - How large is the market potential and/or human impact?

Low $ not many people				>$B or >100M people
1	2	3	4	5

Total =

6. How likely are you to recommend this product to a colleague?

1	2	3	4	5	6	7	8	9	10

Total =

7. What % of your investable income would you spend on this solution?

0	10%	25%	50%	75%	100%
1	2	3	4	5	6

Total =

Grand Total =

Addendum B Judges

Name	Organization	Title/Expertise
Al L'Altrelli, PharmD	UPMC	Pharmacy Administrative Director of UPMC Presbyterian-Shadyside, Presbyterian Campus
Arjun Hattiangadi	UPMC Enterprises	Director, Healthcare Portfolio Development and Management
Arup Mukherjee	Honeywell Vocollect	Technical Project Lead
Brian Bobby, PharmD	Novartis	Pharmacy Consultant, MSL
Daniel Mosse, PhD	University of Pittsburgh	Computer Science Professor and Researcher
Gregory Shevchenko	UPMC Enterprises	Principal Architect
Hashim Al Hassan, PhD	Switched Source	Applications Engineer
Kelly Bobby, PharmD	MaxorPlus, Ltd.	Clinical Pharmacist
Marc Tata	DePuy Synthes Companies	Spine Sales Consultant
Marijanel Alilo, PharmD	UPMC	Hospital Pharmacy
Philip Empey, PharmD PhD	University of Pittsburgh, School of Pharmacy	Associate Director, Institute of Precision Medicine; Pharmacy and Therapeutics
Prachi Joshi	Clinical Translational Science Institute	Translational Research, Medical Product Development
Raja Sooriamurthi, PhD	Carnegie Mellon University	Computer Science
Thomas D. Nolin, PharmD, PhD	University of Pittsburgh, School of Pharmacy	Associate Professor and Researcher
Tyler Hoffman, PharmD	UPMC	Pharmacy Administrative Fellow of UPMC Presbyterian-Shadyside, Presbyterian Campus

Addendum C Mentors

Name	Organization	Title/Expertise
Dave Krebs	PQS	Computer Engineering
Jean Nickleach	UPMC	Dietitian
Jessi Trybus	Sim Coach Games	Chief Games Office
Jill Lavella, PharmD	Value Drug	Retail Pharmacist
John DeJames, PharmD	Value Drug	Pharmacy Strategy Consultant
John Maier, PhD MD	CTSI	Director of Research and Development, Co-Director of Innovation Core for CTSI
John Rice	UPMC Enterprises	Software/Hardware Engineer
Keith Callenberg, PhD	UPMC Enterprises	Director of Machine Learning
Pat Lavella, PharmD	Value Drug	Pharmacy Strategy Consultant
Randall Smith, PharmD	Pitt Pharmacy	Associate Dean, Pitt Pharmacy
Ross Beresford	Pitt SciVelo	Early stage physical medical device and gene therapy development
Tony Kolp	Epic	Software Developer
Tricia Pil, MD	Gateway Health Plan	Pediatrician, Medical Director
Weiyu Zhang	Epic	Software Engineer
Zariel Johnson, PhD	UPMC Enterprises	Program Manager – Early Stage Digital Health Innovation

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If you are interested in sponsoring the 2020 Pitt Challenge, please contact pittchallenge@pitt.edu

The Pitt Challenge's success is in part due to the large support of our sponsors. A special thank you to: *University of Pittsburgh School of Pharmacy, Pitt CTSI, UPMC Health Plan, UPMC Enterprises, Google, Microsoft, Epic, GNC, Thirty/Three Foundation, The Pittsburgh Penguins Foundation, EMBRACE Pittsburgh, CORE, and Value Drug Company.*

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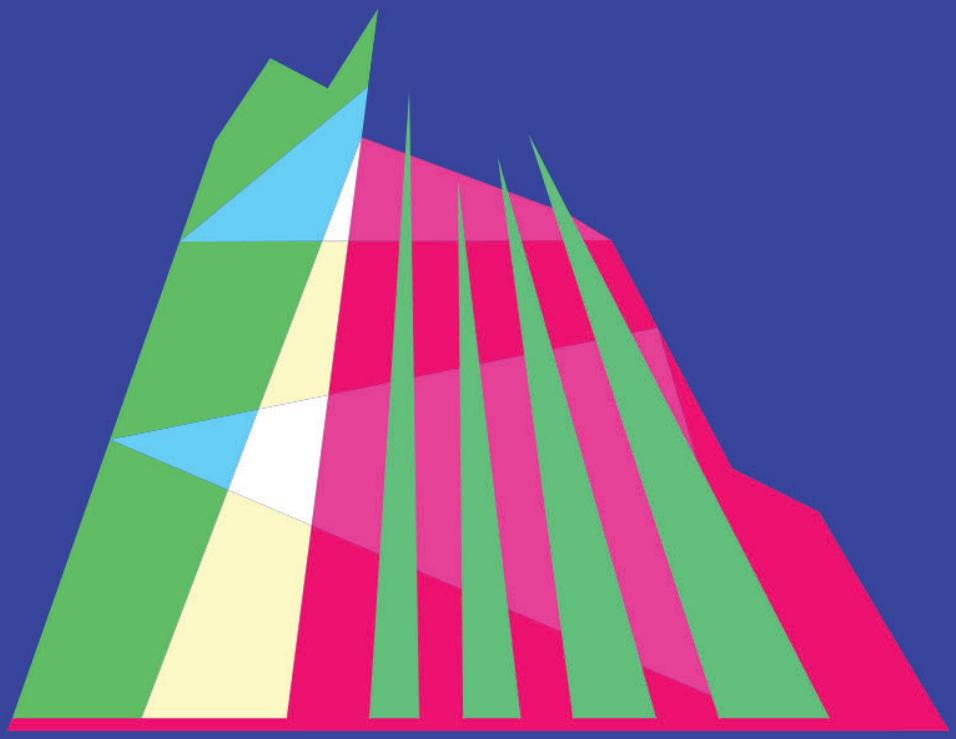

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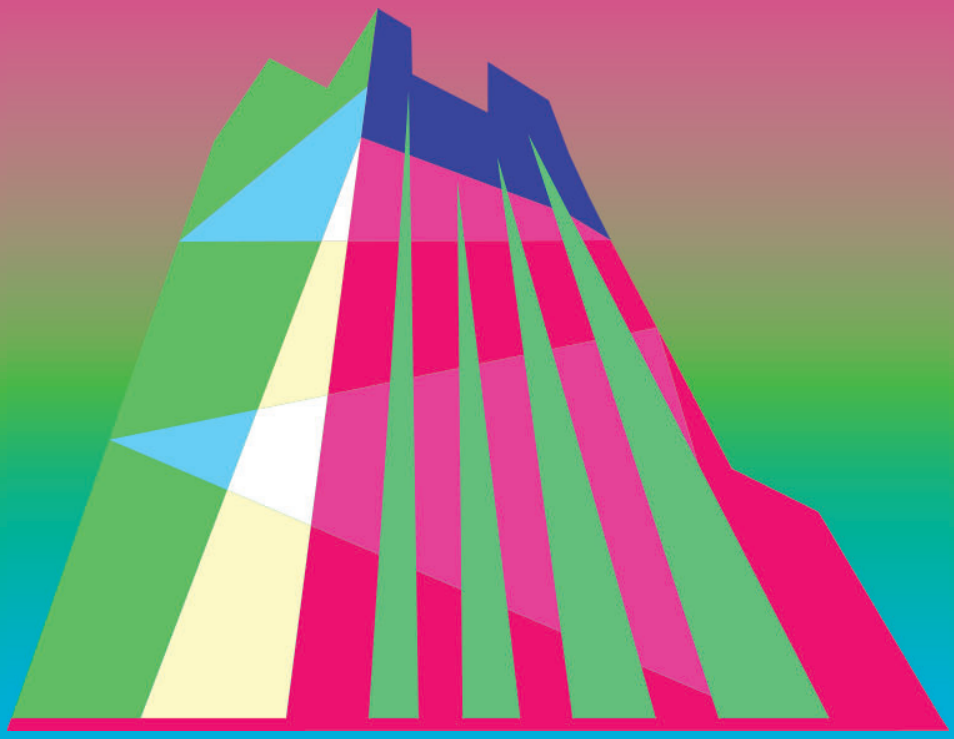

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