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OUR PROCESS
TOUCH AND GO

The Touch and Go process divides collaboration modalities into intense and relaxed. We value collaboration but also realize discipline specialties need time to break away and focus.

Intense collaboration: Research and Validation

Relaxed collaboration: Conceptualization

DESIGN NURSING
INNOVATION IN HEALTHCARE

TOUCH AND GO

|	DESIGN		NURSING	
INTENSE COLLABORATION	User centered Research	1	Pathophysiological Research	
	Concept Development	2	Intervention Concept Development	MODERATE COLLABORATION
INTENSE COLLABORATION	Concept Validation	3	Intervention Validation	
	Concept Refinement	4	Intervention Refinement	MODERATE COLLABORATION
INTENSE COLLABORATION	5 Final integration between Concept and Intervention			

RESULTS
PRE COVID-19

Before COVID-19 we stressed the importance of face-to-face interactions with stakeholders and prototype as much as possible.

Face to face interactions

Make it!

Diversity [from collaboration] creates a richness/advantage

02
UC FORWARD GRANT
2020 C19 C0-LAB
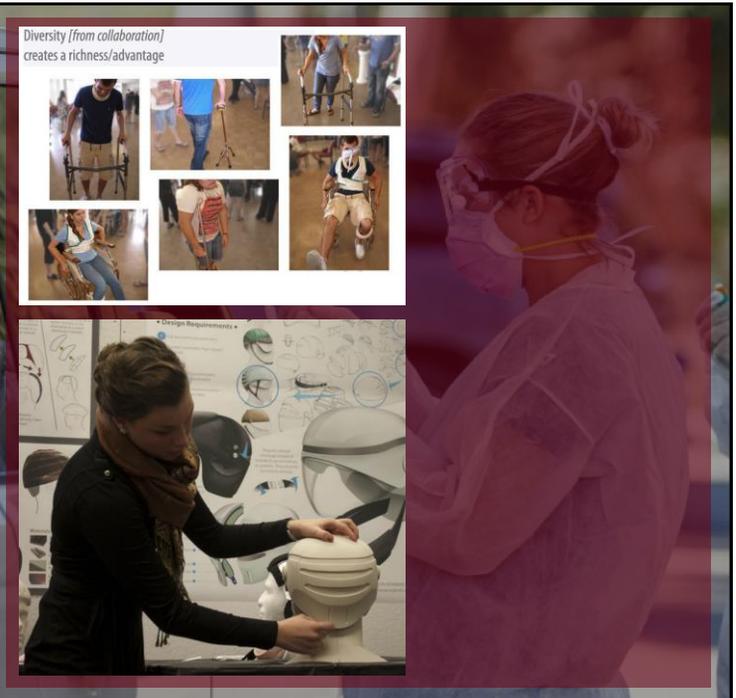
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PROJECT SET-UP

The co-LAB grant was in response to low CO-OP employment and then collaboratively investigating community solutions to conditions associated with COVID-19 and the those most affected.

EXTERNAL COLLABORATION

Partnering with NIOSH gave us direct access to researcher on the pandemics front line

"NATIONAL INSTITUTION OF OCCUPATIONAL SAFETY AND HEALTY"

CO-OP

Our two CO-OP students researched the COVID virus history, identified markets most affected, and developed a guidebook to assist in the studio launch

STUDIO

Collaboration between Industrial Design and Community Health Nursing. Used guidebook to determine project topics and general reference.

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03

SPRING 2021

CO-OP

SPRING 2021
CO-OP

During our CO-OP semester the realities of remote collaboration became apparent. Wi-Fi issues, meeting scheduling, and content review

Rural communities lack reliable access

No F2F meetings = The need for flexibility

Digital content = review when it fits your schedule

INDL4044
UC FORWARD
COLAB:
**COVID-19
PREVENTION**
SUMMER 2021

DESIGN NURSING
UC Forward
UNIVERSITY OF Cincinnati

CO-OP
RESULTS

Once we hit our stride, tasks were completed on time. Students met virtually with NIOSH researchers. They gained knowledge conducting literature reviews. The findings culminated in the completion of a Historical Timeline and a research guidebook that helped launch the Summer Studio

Historical Timeline

Guidebook

Lessons Learned

HISTORICAL TIMELINE: THE VIRUS

Coronavirus History
1965-2019

Scroll   Scroll

1965
Virus B814 is cultivated from a boy's cold. "The first corona virus strain."

1966
Virus 229E is isolated from a medical student with a cold. It is distinct from other known respiratory viruses. "The second Corona virus."

1967
Using B814, Scientist grow another new human virus with similar morphology-OC43.

1968
The term "coronaviruses" is coined.

1978
The last known case of small-pox leaked from a U.K. laboratory.

Evening Mail
Mystery of city killer virus stops spread after probe
SMALLPOX VICTIM DIES

2003
An outbreak occurs of Severe Acute Respiratory Syndrome (SARS) in China, a new human coronavirus born.

SARS CLINIC ENTRA

2004
Researchers report isolating a coronavirus, later named NL63, from a child with pneumonia.

2004
SARS leaks from Beijing lab on at least two separate occasions.

2005
Researchers in Hong Kong discover another coronavirus, HKU1, in two patients with pneumonia.

2009
H1N1 becomes the first pandemic declared by the WHO. H1N1's more common name is the swine flu.
• H1N1 is an influenza rather than a coronavirus.

2012
Researchers isolate a new coronavirus in a man from Saudi Arabia with pneumonia and kidney failure, later named MERS-CoV.

2014
U.S. scientists mishandle Ebola and it escapes the lab.

2017
China builds its 1st biosecurity level 4 (bsl-4) laboratory--the highest level cleared to work with airborne pathogens that have no known vaccines in Wuhan.

2019
Wuhan, China's government reported on treating dozens of cases of pneumonia from unknown causes.

Human Development & Interaction

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HISTORICAL TIMELINE: CVD-19 PANDEMIC

SOCIAL   ECONOMIC   TECNOLOGY

HISTORICAL TIMELINE

SOCIAL   ECONOMIC   TECNOLOGY

COVID-19 VIRUS BACKGROUND

IDENTIFIED TOPIC SPHERES

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Topic Opportunity Areas/Concept Ideas
Findings from Our Research and *NIOSH

Topic	Location / Opportunity Area	Potential Concept Ideas
Grade-School	Classrooms, Hallways, Cafeteria, Recess, Bus, Bathroom, Water Breaks/Fountain, Extra-Curricular Activities, Mental Health, Protecting Teachers, Social Distancing	Products that kill bacteria on papers when turned in or for personal items (UVC), Redesign of a students desk, Transportable covid station, *Portable ventilation/filtering units for a room or cubicle, Apps that track bubble/family groups and advises who/how many are coming together with risky members, Transparent barriers for better communication and aesthetics
Bar/Restaurant	Main Dining, Kitchen, Counter/Bar, Waiting Area, Bathroom, Checkout/Register, Capacity Limits, Calling Orders, Shift to Take-Out, Social Distancing	DIY kit for PPE indoor seating blockade (think IKEA), More intimate or connected solution to dine in pod blockade for groups that are in the same circle, Better insulated cheap to-go boxes, *Transparent barriers for better communication and aesthetics, Portable ventilation/filtering units for a room or cubicle, Apps that track vaccinated/immune vs. non-vaccinated/immune and provide advice when grouping close together, Apps that track bubble/family groups and advises who/how many are coming together with risky members
Travel/Transportation	Departure/Ticketing, Security, Gate, Plane, Baggage Claim, Food/Shops, Bathrooms, Water Fountains, Boneyards, Restoring Customer Confidence, Fuel Emmissions/Consumption per Passenger, Layovers, Subway Stations (waiting to inside of train), Train, Shipping Industry (FedEx, UPS, Amazon)	UVC station for security bins to go through so security staff isn't taken away from doing their typical job, Ways to pod/create modular seat pairs (see layer rideshare ex.), *Portable ventilation/filtering units for a room or cubicle,Transparent barriers for better communication and aesthetics.
Negative Repercussions of Mandated Preventative Measures	Harm to Environment, Harm to Animals, Hindered Communication (Auditory, Visual, Kinesthetic), Face Scan Access, Eye Irritation, Ear Irritation, COPD/Asthmatic, Hearing Impaired, Confusion of How to Properly Use or Dispose of Certain Preventative Measures (Gloves, Masks, Hand Sanitizer)	*Non-fogging masks for glasses-wearers; Masks without gaps; Masks with droplet shields; Ventilated powered-filtration/cooling mask; Environmentally-friendly (Durable with easily replace straps/nose piece, Easily cleanable, Reusable, Biodegradable - Dissolve in lake/ocean but not during a shift with moist breath, degrades in landfills); Durable and fashionable - Outer color fabrics to fit wardrobes. Transparent face masks to allow lip-reading and better interpersonal communication (two options: low cost version, higher cost version).
COVID-19 Dead	Morgues (Treatment of Bodies, Personnel), Hospitals (Initial Handling of Deceased, Personnel Safety), Funeral Homes (Prepping Bodies, Helping Families)	UVC body bags, Space solutions in morgues, safely move bodies without expelling air or fluid from them or hurting the mover, avaible PPE for Coroners, cleaning products or solutions, closure for families/friends of the deceased for viewing/funerals with family/friends. *Ergonomics/Lifting designs for body bag handling, access, transport, storage – Contact Jack Lu (NIOSH/CDC)
Nurse Protection	Hospitals (Safety for Nurses), Senior Living, Testing Facilities, Vaccination Sites	Avaible PPE for Nurses (either a different reprocessing method or easy to produce products), solutions for mental strain, helping familes of healthcare workers stay safe, better cleaning solutions, *Apps that track bubble/family groups and advises who/how many are coming together with risky members, Portable ventilation/filtering units for a room or cubicle.
Testing/Vaccine Processing	Pop-Up sites (Administering, Shipping, Personnel, Clients), Hospitals (Nurses, Patients), Labs (Testing, Packaging, Handling), Homes (Kits, Telehealth)	Ways to be vaccinated/tested without going into hospitals, administering the vaccine, other saftey precautions other than masks after vaccinations, ways to compare vaccines before getting them.
Entertainment	Sports (Football, Basketball, Soccer), Concerts/Performing Arts/Indoor (Casinos, Arcade Restaurants), Active Indoor Entertainment (Rock Climbing, Gym, Bowling, Yoga, Entertainment Centers), Active Outdoor Entertainment (Amusement Parks, National Parks, Public Park, Ski Resorts)	Easy to clean equipment, Tools to help clean tough equipment or spaces (Bowling ball finger holes, Rock climbing holds), Solutions to keep fans safer, *Portable ventilation/filtering units for a room or cubicle, Apps that track vaccinated/immune vs. non-vaccinated/immune and provide advice when grouping close together, Apps that track bubble/family groups and advises who/how many are coming together with risky members, Transparent barriers for better communication and aesthetics

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03
SUMMER 2021
COLLABORATVE STUDIO

SUMMER STUDIO
SETUP

At the end of Spring Semester, there were many course modality unknowns. We planned for the worst

- Identify NIOSH studio mentors
- Refine the Touch and Go process
- Implement experimental collaborative tools from Spring CO-OP

SETUP
VIRTUAL TOOLS

Using Spring Semester as a model, we found MIRO whiteboarding platform ideal for milestone delivery, team collaboration, and professor reviews. This system was excellent for tracking project progress

MIRO Whiteboarding platform

- New for Nursing, it help remove linear thinking
- Enabled designers to post work for real-time evaluation.
- It created a virtual studio. Students could see each others work as in class
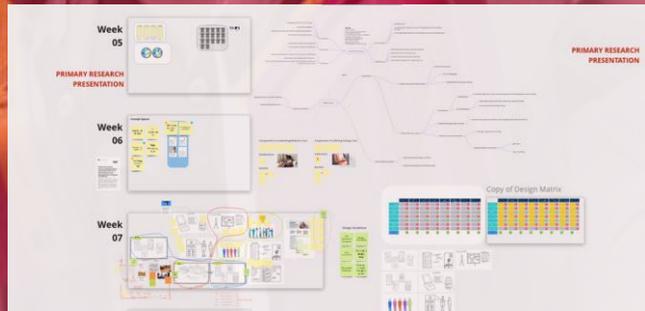
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SETUP
VIRTUAL TOOLS

For in-class interactions, MS Teams provided the tools to meet in secluded Channels. These channels housed team documents and allowed the faculty to have uninterrupted consultations.

MS Teams Virtual Classroom

- Channels for team privacy and consultations
- Chat for in-class just in time interactions
- Video group discussions or on-on-one
- File management system
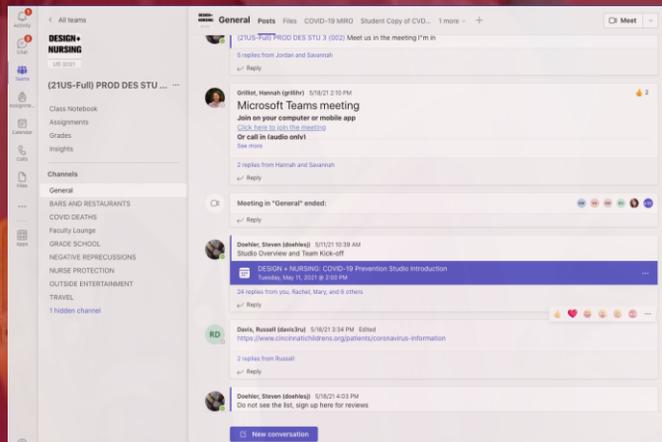
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STUDIO SETUP
TOUCH AND GO

Based on the learning from Spring Semester, we shifted time to provide more time for research and less for development

- Devoted more time to collaborative research
- Extended Validation to provide more time to meet virtually with stakeholders
- Opened projects to awareness champaigns, wellness services, and education plans
- Eliminated physical prototypes in favor of virtual
- Reduced Final phase timeline

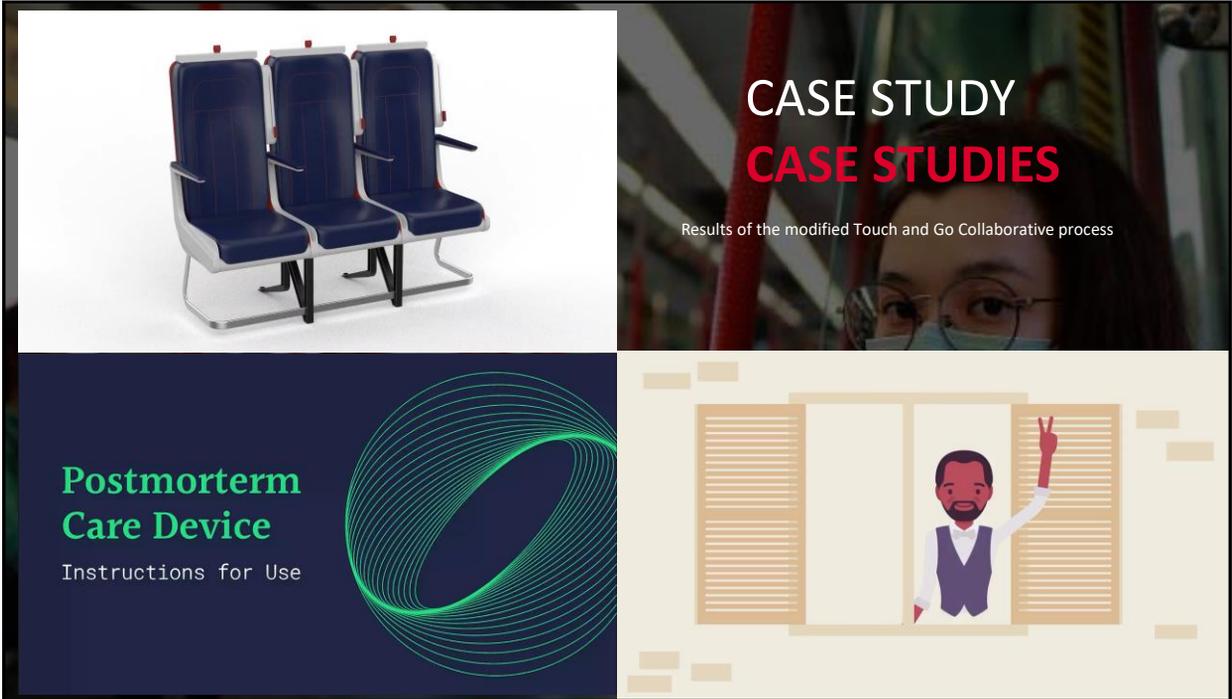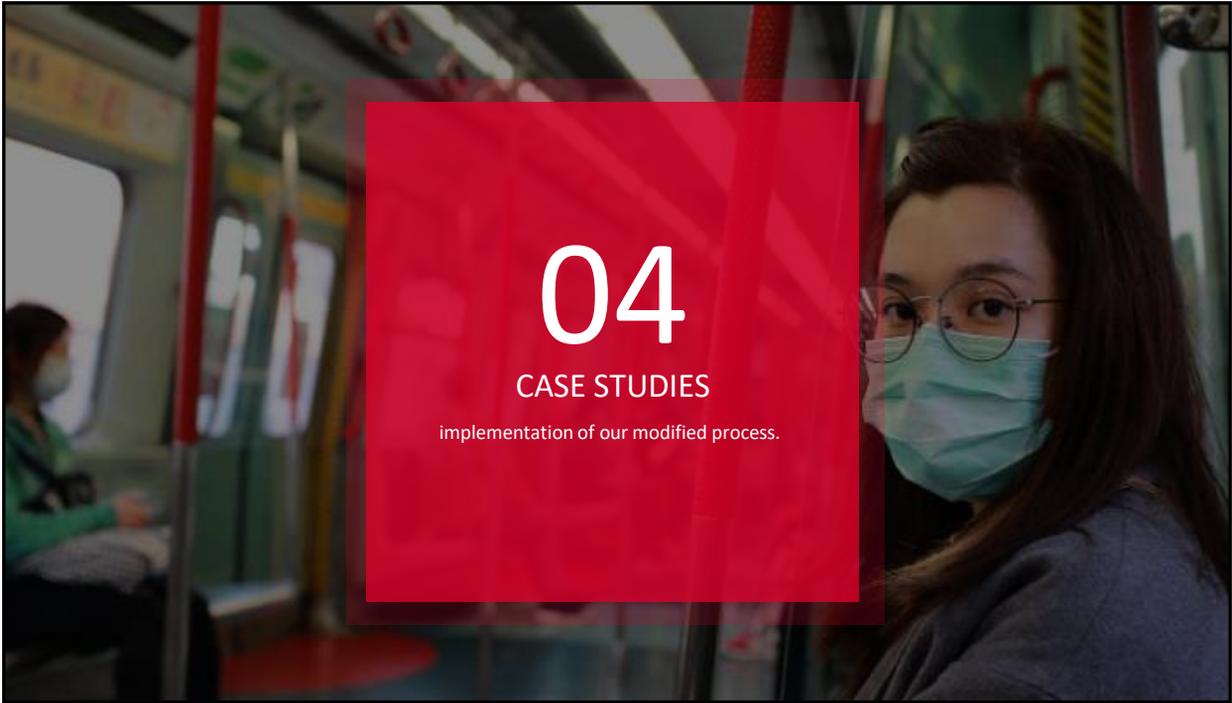|		DESIGN	NURSING
weeks 1-4	Understand — Work collaboratively	User centered research, task analysis Lit. Reviews, interviews, observations, Pathophysiological Assessment, Population pyramids	More integration of designers into population pyramid activities extended research 2 weeks
weeks 5-7	Concepts — Split: Focus on specialty	Conceptualization (Identify) Develop concepts / create, design	Identify problem (conceptualize) Plan Intervention (develop/create)
weeks 8-10	Validate — Work collaboratively	Validate with end users, experts. Determine optimal direction and intervention strategy Increased quality requirements for Validation visuals more time virtual F2F. Better findings summaries	
weeks 11	Refine — Split: Focus on specialty	Refine final concept based on Validation	Refine final intervention based on Validation
weeks 12-13	Re-Evaluate — Work collaboratively	Integrate optimal concept with the optimal Implement plan (put nursing care plan (intervention) into practice) Reduced time for finalizing design solutions	
	Finali — Work collaboratively	Finalization of Final collaborative presentation	

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STUDIO RESULTS
BEFORE / AFTER

Pre-pandemic final expectations vs Post-pandemic

- Physical prototyping was not required
- Higher expectations on defining the "why"
- Face to face interactions between students and stakeholders were not required
- Eliminated physical prototypes in favor of virtual

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04

CASE STUDIES

implementation of our modified process.

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CASE STUDY

CASE STUDIES

Results of the modified Touch and Go Collaborative process

Postmorterm
Care Device

Instructions for Use

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LESSONS LEANED

OVER TWO SEMESTERS THE AUTHORS DESIGNED, CREATED, AND LEARNED HOW REMOTE TEACHING IN A COLLABORATIVE COURSE CAN SUCCEED
AND IDENTIFIED BARRERS FOR OPTIMAL OUTCOMES

PRO's

- Initial research outcomes are comparable in remote leaning
- Shifting to a research emphasis shifted outcomes from product to service solutions
- Having ID student assist with Population Pyramids was positive
- MIRO and MS Teams is affective in our pre-post-pandemic climate
- Service projects were very successful

CON's

- Validation suffered compared to F2F modalities
- Consideration for meeting times conducted over multiple time zones
- Without MIRO and MS Teams the collaboration could not work
- Understanding how to communicate discipline specific knowledge online vs sitting at a table and showing how each other works was a roadblock.
- In a remote environment, a student can hide. Faculty needed to keep close tabs on everyone

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TOUCH AND GO REMOTE

THANK YOU

Q&A