



# DESIGN **THINKING** Showcase

November 5, 2021



## MESSAGE FROM **DR. DAVIES**

Design thinking has taken flight from being a “concept” at UNMC to becoming an important new tool for creating solutions to real educational, research and clinical problems using a human centered lens. Since 2019, when a core group of four UNMC faculty members were sponsored to attend the Stanford d. school for training, these leaders and others have trained 100s of UNMC faculty, students and staff on using this method through engaging, interactive boot camps and one-on-one sessions. Most importantly, several unique solutions have been created in areas as diverse as “how to improve the entire clinical experience for individuals with developmental disabilities at MMI” to “how to ensure UNMC provides the best dental patient experience in the country for people with disabilities” to “how to improve the preceptorship experience for our trainees across the state of Nebraska and around the nation.” There have been numerous other d-thinking projects that have included collaboration with students from the UNO Scott Scholars programs, a longitudinal curriculum redesign project involving 127 UNMC COM students and creation of the Special Interest Group on Design Thinking within the Interprofessional Academy of Educators among others. Several of these important activities and others were presented in the first campus d-thinking symposium held in 2021 and are captured in this symposium summary which I hope you enjoy reading. It is truly remarkable to see the innovation that is occurring across UNMC using this approach.

None of the work leading to the symposium and beyond could have happened without the designation in 2021 of an inaugural interprofessional team of campus design thinking co-directors including Dr. Jennifer Kallio, (COD), Dr. T. J. Welniak (COM), Dr. Kati Bravo (CON) and Dr. Amy Pick (COP). These innovative leaders have been passionate in their drive to see design thinking established on campus, and to see UNMC become a national leader in health focused design thinking solutions, and we owe them all a tremendous amount of gratitude for their commitment and passion.

I would also like to thank Chancellor Jeffrey Gold who has not only been a key source of inspiration for the program, but who also provided the sponsorship that has allowed the co-directors to find the time needed to devote to the projects. Special thanks to Kristan Lester and Robin Jaeckel for their excellent support of the d-thinking activities on campus, and to Dr Harnoor Singh and Dr. Dan Shipp for their useful collaboration and advice. Finally, I thank our d-thinking external advisory board members — Dr. Katherine Segovia (Stanford U), Mr. Doug Dietz (retired GE Healthcare), Dr. Bon Ku (Thomas Jefferson U) and Dr. Morgan Hutchison (Thomas Jefferson U) who have not only given sage advice along the way but spent considerable time consulting with the team and providing valuable feedback and dialogue during the symposium.

Sincerely,  
H. Dele Davies, MD, MS, MHCM  
Senior Vice Chancellor for Academic Affairs  
Dean for Graduate Studies



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# INTRODUCTION TO HEALTH DESIGN THINKING



We are all born with the natural — and coachable — human ability to be intuitive, to recognize patterns, and to construct ideas that are emotionally meaningful as well as functional. This creative ability is like a muscle that strengthens with use and atrophies with neglect.

From the book *Creative Confidence* by David Kelley (IDEO founder and Stanford d.school creator) and Tom Kelley (IDEO partner and author)

In healthcare, we spend a lot of time and energy developing the expertise needed to work effectively in our systems, but comparably less effort on how to facilitate change in those same systems when necessary. How might we empower those in healthcare to generate innovative ideas? Where do those ideas come from? How might we better support individuals to connect with available resources and partners willing to advance them? How might we also lean into the concept of learning through ‘failing safely’ — encouraging expansion of environments that allow for trialing of the roughest prototypes in low stakes settings?

In 2019, an interprofessional group of UNMC and UNO leaders sought out training at the Stanford d.school, an international leader in education on the process of design thinking. Design thinking is a process adapted by many professions that empowers individuals and teams to learn and facilitate innovation in low-stakes, collaborative, and, most importantly, human-centered environments. For companies like General Electric, IBM, and Apple, the process has allowed them to advance technology, products, and process innovations in ways that center their clients’ needs. This has enabled them to break from traditional constraints and learn from ‘failures’ early in the process to avoid costly mistakes.

Since that time, we have worked to share this experience across all UNMC colleges in order to grow our ranks of design thinkers, and to apply design thinking principles to real life problems in healthcare and healthcare education.

In the fall of 2021, this work culminated in a unique annual showcase for work in health design thinking across UNMC. In this brochure, we hope to highlight this amazing work and the process by which the showcase itself was developed as a prototype for scholarly presentation of work in health design thinking. We are grateful to the leadership of this institution and our collaborators for their support of this mission and our roles as inaugural directors of health design thinking. We look forward to implementing the mission and vision with you to better serve our institution, our professions, and our community. Thank you for taking the first steps with us on this journey.

Sincerely,

The UNMC Campus Co-Directors of Health Design Thinking

T. J. Welniak MD MACM

Jen Kallio DDS

Amy Pick PharmD MS

Kati Bravo PhD, RN, CPNP-PC

For more information on health design thinking and our work, feel free to visit [unmc.edu/academy/collaborations/interest-groups/design-thinking](https://unmc.edu/academy/collaborations/interest-groups/design-thinking).





## MEET THE **DIRECTORS**



**JENNIFER K. KALLIO, DDS**  
CAMPUS CO-DIRECTOR

*Assistant Professor, College of Dentistry  
2021 – 2022 Lead Co-Director*



**T.J. WELNIAK, MD, MACM**  
CAMPUS CO-DIRECTOR

*Associate Professor, College of Medicine  
2021 Showcase Conference Co-Chair*



**KATHERINE S. BRAVO, PHD, RN, CPNP-PC**  
CAMPUS CO-DIRECTOR

*Assistant Professor  
College of Nursing – Omaha Division*



**AMY M. PICK, PHARM D, MS**  
CAMPUS CO-DIRECTOR

*Assistant Dean for Experiential Education, College of Pharmacy  
2021 Showcase Conference Co-Chair*



## EXERTNAL **ADVISORY BOARD**



**KATHRYN SEGOVIA, PHD**

*Head of Learning Experience Design  
d.school, Stanford University*



**DOUG DIETZ, MBA**

*Principal Design Thinker (retired)  
GE Healthcare*



**BON S. KU, MD, MPP**

*Assistant Dean for Health & Design  
Professor of Emergency Medicine  
Co-Founder & Director of the Health Design Lab  
Thomas Jefferson University*



**MORGAN HUTCHINSON, MD**

*Assistant Professor of Emergency Medicine  
Director of Education at the Health Design Lab  
Thomas Jefferson University*



## OUR MISSION & VISION



### MISSION

Our interprofessional team collaborates with academic and practice partners to generate innovative solutions to complex issues through use of human-centered design methods.



### VISION

Our vision is to transform UNMC into a worldwide center for excellence in design thinking in health and health care education.



# TIMELINE 2019 & BEYOND

## 2019 MARCH

- > Faculty/staff received formal training at Stanford

## 2019 SEPTEMBER

- > Design Thinking Pop-Up, College of Dentistry Faculty Enrichment Day (Lincoln)
- > Real Innovation Design Thinking, part of the Re-Imagining U Employee Development series (Omaha)

## 2019 NOVEMBER

- > UNMC-UNO three-day design thinking bootcamp with the UNMC Munroe-Meyer Institute: Reimagining autism care for toddlers across Nebraska



National coach:  
Kathryn Segovia

## 2020 OCTOBER

- > UNMC-UNO three-day design thinking bootcamp with the UNMC College of Dentistry: Reimagining the dental care experience for people of all abilities
- > Chancellor's Breakthrough Thinking Series



National coaches:  
Katheryn Segovia  
Doug Dietz

## 2019 JUNE

- > Design Thinking Pop-Up, College of Dentistry Faculty Enrichment Day (Lincoln)

## 2019 OCTOBER

- > Design Thinking Pop-Ups, UNMC Faculty Development, Omaha and Kearney Campuses

## 2020 JULY

- > Special interest group formed as part of the Interprofessional Academy of Educators





**2021**  
**JUNE & JULY**

- > College of Medicine pilots two-day Design Thinking workshop as part of the Health Systems Science coil for all 4th year medical students

- 2022**
- > Create solutions center at UNMC for solving health-related problems using Design Thinking
  - > Workshops focused on diversity, equity and inclusion
  - > Journal publications on design thinking rubric and framework for the health sciences

- 2024**
- > National symposium on design thinking in the health sciences with partners

**2021**  
**JUNE**

- > External advisory board formed

**2021**  
**NOVEMBER**

- > UNMC two-day Design Thinking workshop: Reimagining the community preceptor experience (Kallio, Bravo)
- > Inaugural Health Design Thinking Annual Showcase (Welniak, Pick)

- 2023**
- > Regional symposium on design thinking in the health sciences
  - > Journal on Design Thinking in health sciences

- 2025**
- > UNMC is national leader in health sciences design thinking

# REIMAGINING THE CONFERENCE EXPERIENCE: UNMC HEALTH DESIGN THINKING ANNUAL SHOWCASE

## A NOVEL FORUM FOR SCHOLARSHIP IN DESIGN THINKING

**Challenge:** How might we rethink the academic conference experience as a vehicle for designers and attendees to codesign, collaborate, and disseminate healthcare design thinking innovations at all stages of development?

**Users:** Active and potential health designers across the University of Nebraska system

**Idea:** UNMC Health Design Showcase

**Team:** DT Leads, UNMC Senior Vice Chancellor Davies, Robin Jaeckel, Kristan Lester, Emily Glenn

The initial charge was straight-forward — to showcase health design thinking efforts across the institution. What began as a grass-roots movement at UNMC had grown significantly through multiple successful workshops, faculty and employee development seminars, student and resident curricula, and a popular interest group in the Interprofessional Academy of Educators. Exploration of solutions to the problems faced in health and healthcare education had grown across all levels of the institution. We knew that many here were already innovating using design thinking, but that there could also be many more innovators out there who may be inadvertently applying design thinking principles to their work. Could there be a forum for these individuals to come together to learn from or even add to each other's ideas? And could that forum be one that welcomes and celebrates innovations at all stages of iteration, even those that have not yet been implemented fully? It became clear to the team that the constraints of the traditional academic healthcare conference would need to be reimaged.

## PROTOTYPES OVER POSTERS AND “THE MESS HALL”

Out of all of the more stubborn and arguably outdated traditions in academia, poster presentations remain high on the list. Authors stand awkwardly in front of large expensively printed bodies of text describing their scholarly work while attendees come by to squint and critique their methods and findings. Again, not a great fit for what we were going for. “What if,” the design lead team wondered...

“ *instead of posters, teams represented their ideas in the form of prototypes for attendees to experience?* ”

“ *Yes, and... what if that act of attendees experiencing the idea might be a way for design teams to test and get feedback data on their concept for their next iteration?* ”

“ *Yes, and... we encourage bringing all spectra of those prototypes in a huge, dynamic, and beautiful mess that shows people the energy that encompasses design thinking?* ”

“ *Well... we are having it over the lunch hour... can we call it the ‘mess hall’?* ”

With the help of fellow design thinker Emily Glenn at the McGoogan Library, a space was procured next to the Jim and Karen Linder Maker Space, and the “Mess Hall” concept was born.





## EVOLUTION OF THE HEALTH DESIGN ABSTRACT

In the Spring of 2021, a call was put out to the UNMC community to submit examples of human-centered innovations. The response and the ideas submitted were far beyond expectation, as innovators we had never met and/or who had never heard of design thinking were taking their own leaps of faith and submitting bold, human-centered solutions for common problems.

Ahead of most academic conferences, abstracts are evaluated primarily on merit and fit to the call. Consistent with our vision to reimagine the conference as a partner in the iterative process, authors were provided feedback and the opportunity for continued expansion and refinement to be even more in line with the spirit of design thinking. Designers were challenged to move their ideas forward into more tangible, visual prototypes and/or via further testing and codesign with target users. Ultimately, 12 abstracts made the final cut to be designated towards specific formats: 1) a prototype session (dubbed ‘the mess hall’) and/or 2) a plenary presentation. Our first-of-its-kind interactive showcase was on its way to becoming a reality.

## EXAMPLES OF FEEDBACK PROVIDED BY PEER REVIEWED AUTHORS

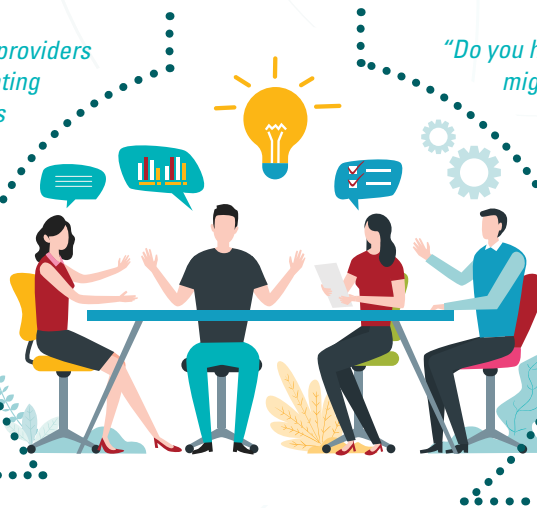
*“I love the considerations for both providers and patients here—You are anticipating many needs with tech literacy, barriers to implementation, provider/patient behavior towards the application will be important, but there also may be a lot to be learned upon piloting this out.”*

*“Do you have any data, stories, anecdotes that might better help us/you understand the frustrations and opportunities that exist in this population? If not, how could you get at this and could you describe it in your process?”*

*“How might you visually represent your idea for this? Could you simulate or even test this proof of concept in person at the gallery (mess hall)?”*

*“What could you do to start prototyping and testing parts of this concept today to inform future iterations, pitches, and testing with your stakeholders (patients, practitioners, manufacturers)?”*

*“Can you tell us more about how you got to that idea? What are/have you been seeing that suggests that this fulfills a need, and who are the humans that this idea has the biggest potential to help?”*




# REIMAGINING THE CONFERENCE EXPERIENCE: UNMC HEALTH DESIGN THINKING ANNUAL SHOWCASE


After conversations with multiple designers, we determined the design thinking scholarship might benefit from an updated abstract format to better capture the process and priorities of design work. The following is an example of one of our showcase submissions used to highlight these proposed abstract components.


## ANATOMY OF THE HEALTH DESIGN THINKING ABSTRACT

**Team members:** Chinenye Dike, Jessica Gormley, Katherine Bravo, Tedd Welniak, Ruben Quiros, David Freestone, Julie Marshall, James Gehringer

**Category:** Patient Care

 Starting by identifying the end-user supports prioritization and understanding of their needs as central both the problem and the innovation

 Design thinking can be a messy, cyclical iterative process but should have some accountability to move forward by way of additive, collective, and experiential learning. While there are a number of versions, common ones cite steps of the 'design cycle' to include empathy, define, ideation, prototyping, and testing. An expanded abstract or manuscript would ideally explain the process by which these (or similar) steps are addressed.

 Lots of ideas come out of design thinking, but those that come forward are usually those that are most ground-breaking and/or most likely to achieve their intended function. Lenses of viability, feasibility, desirability, and sustainability may be applied during testing to inform better iterations.


**End-User:** This design thinking innovation was inspired by families of children with G-J tubes and complex medical conditions. The products developed have potential for analogous use in other health care disciplines.

**Problem/Challenge:** Traditionally, gastro-jejunostomy tubes are placed under general anesthesia in children who are already high risk for anesthesia. The challenge was to decrease the need to use general anesthesia in placement of these tubes and to make parents comfortable with the procedure.


**Process/Timeline:** The application was submitted by Dr. Dike and Dr. Dele Davies to the Stanford d.school's d.leadership program cohort. The proposal was then selected by the Stanford design thinking school as one of the proposals to be developed over the course of eight weeks (starting in March 2021) as facilitated by Stanford design school students and faculty virtually using Zoom and the Mural app. Stakeholders were recruited from across UNMC and through message boards to inform and refine the ideas developed while ensuring that solutions met the target users' needs.

**Best idea(s) to come out of your process (including name and core function):** Products included "PPP — Parent Provider Partnership" and "Comfort Connection." These products are a collaborative platform where parents and providers can both replicate and customize anticipated procedural experience. Key function of the "Comfort Connection": A drag and drop interface where parents and providers create a collaborative experience catered to their child's particular needs. Key function of the "PPP": An educational platform where parents learn about the tube and procedure, customize the environmental settings of the procedure and simulate the procedure so that the family can feel like a partner in the care of the child.




 Bringing the idea early on to the target users in a safe, low-stakes manner is critical to informing next steps of iteration. More than just a 'pitch', good testing asks users to interact with or even roleplay with tangible representation of the idea, providing important data to the designers.

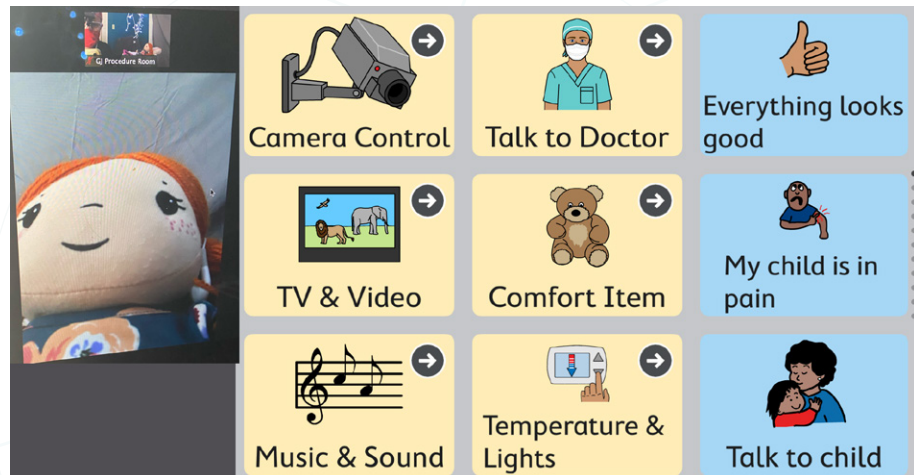
• **Testing:** Tested prototype with nine parents of children with G-J tubes and multiple health care providers as well as five asynchronous participants using a video demonstration with survey questions. IRB application submitted and currently under review for further testing.

 Much of Health Design Thinking is in a constant iterative cycle of reevaluation and improvement. 'Rough work' should be celebrated and always be considerate of where and how it might be able to evolve for the better. What expertise or insight is still out there that might be able to help? What can be done to get to a minimum viable product? What was learned that might require going back a step or two to achieve better fidelity to the user's needs?

• **Next Steps/Needs:** Biweekly meetings to discuss steps involved to refine our prototypes closer to full implementation. These steps include obtaining IRB approval, applying for grant funding, and completing further feasibility testing in a simulated clinical environment.

• **Prototype:** See attached for the latest representation of our Comfort Connect interface which incorporates optional two-way video, communication, and environment customization by way of a touchscreen tablet.

 Addition of representative media for the idea by way of a photo, diagram, audio clip, script, video, or other artifacts enables the audience to experience a bit of both the iterative process as well as the latest or final form of the idea resulting from the process.



# REIMAGINING THE CONFERENCE EXPERIENCE: UNMC HEALTH DESIGN THINKING ANNUAL SHOWCASE

## BEST PRACTICES AND A MOVE FORWARD

### KEYNOTES

Following speeches from Chancellor Gold, Senior Vice Chancellor Davies, and the Health Design Thinking Leads, the conference began with a keynote presentation from world-renowned health designers, and UNMC external advisors Dr. Morgan Hutchinson and Dr. Bon Ku. Attendees of the session learned of the Jefferson Health Design Lab at Thomas Jefferson University in Philadelphia, PA and their experience in using design thinking to develop health solutions for their community during the COVID-19 pandemic.

### BEST OF THE BEST

The day would be capped off by oral presentations from select UNMC and UNO designers whose work was felt to be particularly defining of the direction of health design thinking on and beyond our campuses. It is upon these examples and all innovation work being done here every day by brilliant, thoughtful designers and their users that we aim to build an infrastructure and a culture that inspires the bravest solutions to the toughest problems in healthcare worldwide.



# MESS HALL EXHIBITORS



**USER** Front-line health care providers  
**CATEGORY** Patient Care  
**IDEA** Use of racing helmet technology to inform the development of better PPE  
**TEAM MEMBER** Beth Beam

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**USER** Behavioral health providers and patients with depression from underserved communities  
**CATEGORY** Patient Care  
**IDEA** Use of a free mobile health app (mindLAMP) to augment, individualize, and support the care of patients with depression  
**TEAM MEMBERS** Max Lawlor, Maria Mickles, Louis Fok, Danae Dinkel, Shinobu Watanabe-Galloway, Margaret Emerson

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**USER** Patients with (GEJ) feeding tubes and their caregivers  
**CATEGORY** Patient Care  
**IDEA 1** PPP: Parent Provider Partnership — An educational platform where parents and providers can both simulate and customize anticipated procedural experiences  
**IDEA 2** Comfort Connection — A digital interface between caregivers and the procedural setting that empowers caregivers to comfort and individualize the procedural experience in real-time and from any location.  
**TEAM MEMBERS** Chinenye Dike, Jessica Gormley, Katherine Bravo, Tedd Welniak, Ruben Quiros, David Freestone, Julie Marshall, James Gehringer

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**USER** Graduate medical learners in anesthesiology  
**CATEGORY** Education  
**IDEA 1** Use of animation augment and simplify teaching of complex concepts in neuroanesthesiology  
**IDEA 2** Use of an “OR Live Stream” to facilitate problem-based learning discussions in anesthesiology  
**TEAM MEMBERS** Joseph Pawlowski

# MESS HALL EXHIBITORS

**USER** Educators who utilize metacognition in assessing knowledge and competence

**CATEGORY** Education

**IDEA** A proposed, novel 3-dimensional, 4-level assessment method (the “3D4L”) that offers a more reliable assessment of participants’ metacognitive states

**TEAM MEMBERS** Ethan Snow, Michael Preheim, Josef Dorfmeister

**USER** Interprofessional teams working with patients experiencing social determinants of health (SDH)

**CATEGORY** Education

**IDEA** Use of 360-degree videos to facilitate the learning and valuing of SDH in special populations in an immersive way

**TEAM MEMBERS** Jana Wardian, Tessa Wells

**USER** Rural/low-resource healthcare providers requiring negative pressure isolation in the setting of highly infectious diseases

**CATEGORY** Patient Care, Education

**IDEA** The ISTAR (Isolation System for Treatment and Agile Response for high-risk Infections): an effectively portable, affordable, and easy to use isolation unit that can be adapted to a multitude of settings.

**TEAM MEMBERS** Katie Willet, Jana Broadhurst, James Lawler, David Brett-Major, Victoria Wadman, Bradford Huff, Keaton Read, Rachel Prudhomme







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**USER** Healthcare learners and staff

**CATEGORY** Community Health

**IDEA** Development of the 1Check: COVID-19 Screening Tool

**TEAM MEMBERS** Grayson Stanton, Keegan Brown, Carly Cameron, Harnoor Singh, Wesley Zeger, Michael Wadman, Thang Nguyen, Rod Markin, Jeffrey P. Gold

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**USER** Patients receiving dental care at Munroe-Meyer Institute (MMI)

**CATEGORY** Patient Care

**IDEA** Reimagining the dental experience for patients of all abilities at MMI

**TEAM MEMBERS** Joshua Oarhe, Toluwa Davies, Allie Wilson, Ell Waters, Nour Elrokhsi, Heather Richard, Harnoor Singh, Jen Kallio, Claire Koukol, Peggy Moore

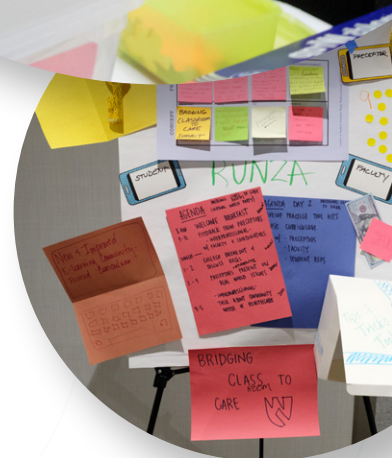
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**USER** Emergency department staff and patients who do not speak English as a primary language

**CATEGORY** Patient Care

**IDEA** Addressing language barriers in the emergency department

**TEAM MEMBERS** Zander Gibney, Esther Samuel, Jackson Ward, Tony Heinemann, TJ Welniak, Heather Nichols, Wesley Zeger Dalton Nelsen



# BEST OF THE BEST **SHOWCASE ORAL PRESENTATIONS**

**TARGET USER** UNMC faculty, staff, and students interested in cultivating interest in innovation science and design thinking

**CATEGORY** Education

**CONCEPT** Utility of interprofessional workshops to build a portfolio and grow the ranks of health designers at an academic medical center

**PRESENTER** Jennifer Kallio, DDS

**TEAM MEMBERS** Jennifer Kallio, Dele Davies, T.J. Welniak, Kati Bravo, Amy Pick, Kathryn Segovia

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**TARGET USER** Pharmacy students

**CATEGORY** Education, Systems and Processes

**CONCEPT** Hosting of a massive, international, and virtual design thinking challenge to reimagine professional pharmacy education standards

**PRESENTER** Amy Pick, PharmD

**TEAM MEMBERS** Amy Pick, Michael Wolcott, Ashley Castleberry, Christopher Johnson, Adam Persky

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**TARGET USER** 4th-year medical students

**CATEGORY** Education

**CONCEPT** Design thinking as a strategy to teach medical students health systems science

**PRESENTER** Jordan Warchol, MD, MPH

**TEAM MEMBERS** Jordan Warchol, Kelly Caverzagie, Jennifer Kallio, T.J. Welniak, Kati Bravo, Amy Pick





**TARGET USER** Patients with GEJ tubes and their caregivers  
**CATEGORY** Patient Care  
**CONCEPT** Reimagining the feeding tube experience for patients with GEJ tubes and their caregivers  
**PRESENTER** Chinenye Dike. MD  
**TEAM MEMBERS** Chinenye Dike, Julie Marshall, Jessica Gormley, T.J. Welniak, Kati Bravo, David Freestone, Ruben Quiros

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**TARGET USER** Undergraduate students enrolled in the UNO Scott Scholars Program and the Omaha community  
**CATEGORY** Education  
**CONCEPT** Radical integration of design thinking into an undergraduate honors curriculum at UNO and a portfolio of collaboration with UNMC  
**PRESENTERS** Dan Shipp, EdD  
Harnoor Singh  
**TEAM MEMBERS** The UNO Scott Scholars Program

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**TARGET USER** Higher education and healthcare employees, faculty, and learners  
**CATEGORY** Community Health  
**CONCEPT** The 1-Check COVID App A helpful tool for keeping employees and learners safe during the COVID-19 Pandemic (A UNO Scott Scholars and UNMC Design Thinking Collaboration)  
**PRESENTER** Wesley Zeger, DO  
**TEAM MEMBERS** Keegan Brown, Grayson Stanton, Carly Cameron, Harnoor Singh, Dan Shipp, Wesley Zeger, Michael Wadman, Thang Nguyen, Rodney Markin, Jeffrey P. Gold



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