



THE UNIVERSITY OF
TENNESSEE
HEALTH SCIENCE CENTER.

CHIPS

ANNUAL REPORT

2021-2022



UTHSC
CENTER FOR
HEALTHCARE IMPROVEMENT
AND PATIENT SIMULATION

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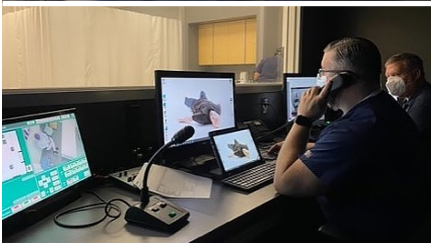
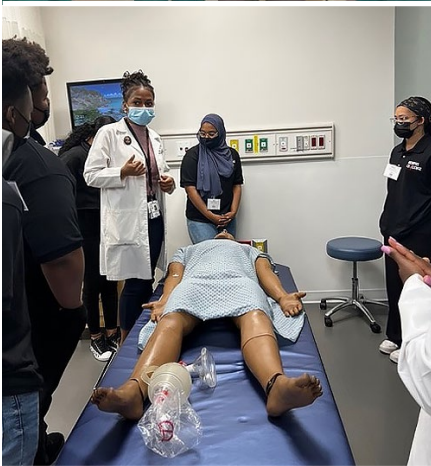
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ABOUT CHIPS

The Center for Healthcare Improvement and Patient Simulation (CHIPS) is a 45,000-square-foot, stand-alone building for health care simulation and interprofessional education. The state-of-the-art facility opened in 2018 and is designed to meet the simulation needs of all UTHSC students, residents, professional staff, and clinical partners. CHIPS is dedicated to improving the quality of health care delivery through education, research, assessment, and enhanced clinical skills with standardized patients (actors trained to portray patients), high-fidelity patient simulators (manikins), and virtual reality settings. The building is the only one of its kind in Tennessee and one of only a handful in the country.





OUR VISION

The Center for Healthcare Improvement and Patient Simulation (CHIPS) endeavors to advance health care through patient simulation as an international center of excellence for health care simulation. CHIPS is centered on the values of psychological safety, transparency, and servant leadership.

OUR MISSION

The Center for Healthcare Improvement and Patient Simulation (CHIPS) is dedicated to improving the quality of health care delivery through education, research, assessment, and enhanced clinical skills with standardized/simulated patients (individuals trained to portray patients), high-fidelity patient simulators (manikins), and virtual reality settings.

INTRODUCTION

The 2021-2022 academic year was another year filled with challenges and adversity. As the world continued to rebound from the COVID-19 pandemic restrictions, the limitations of in-person health care simulation opportunities waxed and waned. Although the number of canceled events was down from the previous year, the total number of requests was down, due to the changing in-person limitations for simulation events on campus. Our Standardized and Simulated Patient events saw the greatest impact over the course of this academic year.

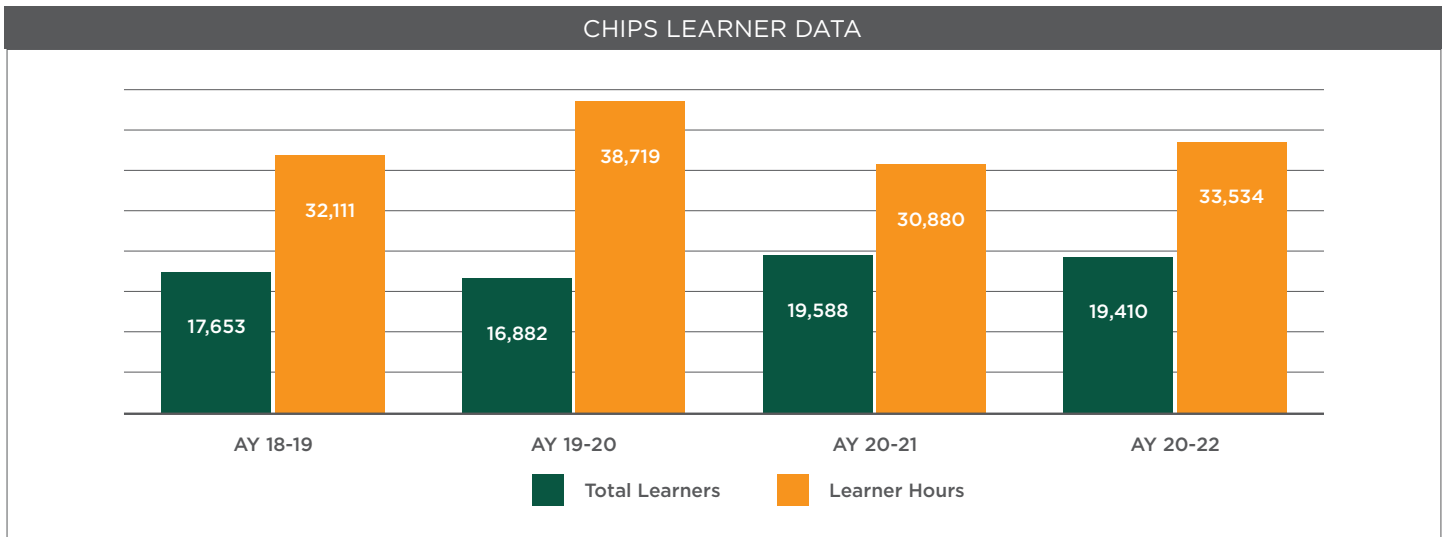
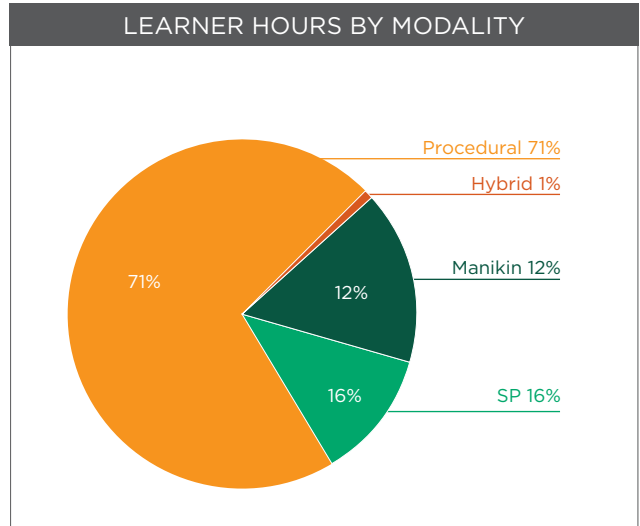
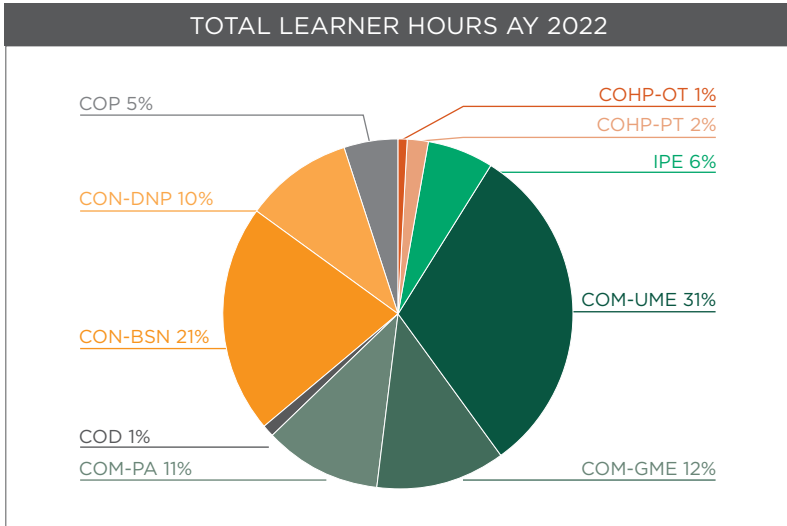
CHIPS saw learner encounter numbers stabilize this year associated with with an 8% increase in learner hours from the previous year; however, the greatest increase for the year was to the elements of diversity included in our Standardized/Simulated Patient (SP) scenarios. In a continued effort to promote the campus-wide focus on health equity, 46.7% of CHIPS SP scenarios reflected elements of social determinants of health and diversity. This is an increase from 14.4% of patient scenarios in the academic year 2020-2021.

“Our health care learners work with carefully trained human role players, called Simulated Patients (SPs) who portray the roles of the patient or family member, this provides hands-on practice in a safe environment. Our goal in developing the simulation scenarios that the SPs portray is to fully represent the diversity of our community and the world around us. Patients come from communities with different levels of resources and access, and healthcare providers must be prepared to serve everyone.”
--Jamie Pitt, CHIPS Assistant Director of Education for Standardized/Simulated Patients

In its first full year as an accredited health care simulation program, CHIPS saw its focus move from quantity to quality. In many ways, the 2021-2022 academic year served as a transitional year for our program. As we transition from a pre-COVID world toward post-pandemic norms, the staff at CHIPS continues to adapt to the changing learning environment. We continue to aspire to offer the highest-level quality of simulation education.

CHIPS ACTIVITY

From August 2021-July 2022, CHIPS welcomed **19,410 non-unique learners** through our simulation events, accounting for **33,543 learner hours**. The total learner hours are broken down by program and modality in the graphs below. In addition to these regularly scheduled events, CHIPS issued **806 licenses** for Advanced Cardiac Life Support (ACLS), Pediatric Advanced Life Support (PALS), and Basic Life Support (BLS).



ACCOMPLISHMENTS AND ACCOLADES

Jarrold Young was selected as one of the three Planning Chairs for the International Meeting on Simulation in Healthcare (IMSH) 2023. As a meeting Planning Chair, Jarrod was tasked with setting the tone and theme of the meeting, as well as selecting keynote speakers and approving the educational sessions offered at the meeting. This role recognized individuals who have a strong background of volunteer work within the Society for Simulation in Healthcare (SSH) and have a strong understanding of the future needs of the Society. The meeting will take place in Orlando, FL in January 2023.

Teresa Britt served on the SSH Committee that completed an extensive revision of all the accreditation companion documents. These documents serve as exemplars and instructional content toward accreditation application. The documents were reviewed by the SSH Accreditation Board and became part of the accreditation resources for all applicants starting in July 2022. Thanks to Teresa's efforts, CHIPS staff members continue to stay on the cutting edge of accreditation requirements, keeping our program aligned with the most recent standards.

In addition to the aforementioned accolades, CHIPS is proud to recognize the following team members for their achievements from the past year:

- **Nick Brauer**
 - Chair- SimGHOSTS Affiliate Programs
 - Co-Chair- SimGHOSTS Mentor/Mentee Program
 - Invited guest lecturer- Massachusetts General Hospital Institute of Healthcare Professionals, Master of Simulation Operations course track
 - S3 2022: Abstract Reviewer
 - SimGHOSTS USA 2022 Abstract Reviewer
- **Teresa Britt**
 - Board Member- Tennessee Interprofessional Practice and Education Consortium
 - Board Member- Tennessee Simulation Alliance
 - Global Network for Simulation in Healthcare (GNSH)
 - SSH Accreditation Site Reviewer
 - INACSL Standards Committee for the development of the new Healthcare Simulation Standards of Best Practice- Professional Development which was published for implementation in September 2021
 - IMSH 2023: Course Reviewer Education Track
 - SimOps 2022: Course Reviewer Education Track
 - Editorial Reviewer: Nursing Education journal
 - Completed the Center for Telehealth, Innovation, Education and Research Telehealth certification
- **Tim Dotson**
 - Completed the UIC course "Training SPs to Debrief and Give Feedback Workshop"
 - Completed the Center for Telehealth, Innovation, Education and Research Telehealth certification
- **Sophia Mosher**
 - IMSH 2023: Course Reviewer Administration Track
- **Jamie Pitt**
 - Completed the UIC course "Training SPs to Debrief and Give Feedback Workshop"
 - Completed the Center for Telehealth, Innovation, Education and Research Telehealth certification
 - ASPE Curriculum Development and Advancement Committee, Case Development Template Reviewer
- **Katie Porcaro**
 - Reviewer- IMSH 2023: Course Reviewer Simulation Operations Track
 - Reviewer- SimOps 2022: Course Reviewer Technical Operations Track
- **Amy Rush**
 - Completed the Standardized Patient Educator Certification Program through the University of Illinois at Chicago College of Medicine
 - Completed the Center for Telehealth, Innovation, Education and Research Telehealth certification
- **Kuan Xing**
 - Received a certificate on Entrustable Professional Activities
 - Manuscript Reviewer: Simulation in Healthcare journal
 - Manuscript Reviewer: Clinical Simulation in Nursing journal
- **Jarrold Young**
 - Appointed to the SSH Accreditation Council as a voting member
 - Invited guest lecturer- Massachusetts General Hospital Institute of Healthcare Professionals, Master of Simulation Operations course track
 - SimOps 2022: Lead, Technical Operations Content Track



SIMULATION EDUCATION HIGHLIGHTS



The CHIPS team welcomed many more students back to the building in the academic year 2021-2022 for simulation education. This achievement required flexibility and innovation to provide UTHSC students with excellent simulation experiences, while adjusting to the permanent changes caused by the pandemic. Often, events were approached using multiple modalities and required frequent pivots to meet student needs. For example, the education team piloted the inclusion of a student via the Double Robotics (a robot on wheels with phone and tablet connectivity to allow telepresence) due to a medical condition that made them unable to attend the simulation in person. As always, the CHIPS team worked diligently to provide excellent simulation experiences to UTHSC students. We are excited to share some of the education team's major accomplishments for AY2022!

The University of Tennessee Health Science Center College of Pharmacy (UTHSC COP) Office of Continuing Professional Development is excited to offer the Pharmacist Primary Care Certificate Training Program. As the role of the pharmacist continues to expand and evolve, this program aims to prepare pharmacists to engage in direct patient care and develop the skills and expertise necessary to succeed in the outpatient primary care setting and be more competitive in the job market. This ACPE-accredited program includes 30 hours of didactic and experiential training over the course of 12 weeks, which will count for 30 hours of continuing pharmacy education (CPE). Of those 30 hours, 20 hours will be dedicated to didactic learning and will be offered via web-based home study modules. The remaining 10 hours will consist of experiential learning that will be gained through hands-on, practical skills application and simulation.

Teresa Britt and Jamie Pitt were co-authors of the chapter "7.4 Scenario Case Development" that was released in the textbook "Defining Excellence in

Simulation Programs," 2nd edition. The textbook is an official publication of the Society for Simulation in Healthcare and was written with a "specific focus on the development and management of quality simulation programs." This textbook is widely considered the main resource for healthcare simulation programs looking to align with best practice standards in the field.

After more than a year in module content creation and instructional design, the CHIPS simulation on-boarding and professional development modules were deployed for faculty participation. These four initial modules cover Simulation Foundations and orientation to CHIPS, Best Practices in Simulation Case Design, Prebriefing, and Simulation-Enhanced Interprofessional Education. These modules will serve as the initial on-boarding for all faculty as they prepare for the Simulation Educator role. The module achievement will provide faculty with the foundation needed for simulation implementation and support the simulation accreditation requirements in teaching and education.

<https://cenow.uthsc.edu/chips-professional-development-resources>

SIMULATION EDUCATION HIGHLIGHTS

STANDARDIZED/SIMULATED PATIENT ANNUAL TRAINING

Annual training allows the Standardized/Simulated Patients at CHIPS to stay up to date on best practices and policies. Annual training is an in-depth review of key topics such as objectively evaluating learners using the Master Interview Rating Scale, our communication skills rubric and for further development of essential skills such as realistic portrayal of patient/family member roles. Using interactive educational approaches like acting exercises, hands-on demonstrations, and game-based learning, annual training focused on preparing SPs to return to in-person simulation on campus. Our goal was to create an atmosphere that fostered productivity and camaraderie.

"I just can't say enough how much I enjoyed the training. Jamie, Amy, and Tim made me feel as though this is where I was meant to be. The atmosphere was relaxed and engaging. The content was presented in an organized and attention-keeping manner. It was NEVER dull or boring. I appreciated the many different methods used to present the material, from PowerPoints to YouTube videos, role play and written evaluations. I particularly liked the MIRS training and the simulation of a typical Learner encounter. I left yesterday feeling prepared and ready." -- Quote from an SP

serve as the initial on-boarding for all faculty as they prepare for the Simulation Educator role. The module achievement will provide faculty with the foundation needed for simulation implementation and support the simulation accreditation requirements in teaching and education.



PHARMACIST PRIMARY CARE CERTIFICATE TRAINING PROGRAM WITH SPS

Early in the 2021-2022 academic year, CHIPS partnered with the University of Tennessee Health Science Center College of Pharmacy (UTHSC COP) Office of Continuing Professional Development to launch the Pharmacist Primary Care Certificate Training Program. As the role of the pharmacist continues to expand and evolve, this program aims to prepare pharmacists to engage in direct patient care and develop the skills and expertise necessary to succeed in the outpatient primary care setting and be more competitive in the job market. This ACPE-accredited program includes 30 hours of didactic and experiential training over the course of 12 weeks, which will count for 30 hours of continuing pharmacy education (CPE). The experiential learning component is gained through hands-on, practical skills application in simulations with CHIPS Standardized Patients.



SIMULATION EDUCATION HIGHLIGHTS

OT IMPROV WORKSHOP

The CHIPS SP team delivered an interactive workshop for Occupational Therapy (OT) students on how to utilize techniques adapted from improvisational theater with Alzheimer's and dementia patients and their caregivers. According to the National Endowment for the Arts, involvement in arts programs has been shown to have a positive effect on physical health, mental health, and social functioning in older adults, regardless of their cognitive ability. Research into group interventions for caregivers has shown that these programs reduce levels of depression and feelings of burden or stress, and improve social outcomes (Chien et al., 2011).



MANIKIN AND PROCEDURAL

College of Nursing faculty expanded their Sickle Cell Bootcamp program to include a new simulation to provide nurses with the skills needed to recognize and treat sickle cell patients. Faculty partnered with Teresa Britt, Sophia Mosher, and Katie Porcaro in CHIPS to create a case portraying a sickle cell patient experiencing secondary symptoms, with the end goal being to recognize and treat Acute Chest Syndrome (very commonly undiagnosed in sickle cell patients). This was achieved using a high-fidelity manikin and a scaffolding design to the simulation (i.e., learners observe participants and tag-in as the case progresses). This was funded through a grant from Global Blood Therapeutics, Inc. (GBT) with an aim to increase the impact of the Sickle Cell Boot Camp to Promote Nursing Excellence.

CHIPS worked with Dr. Pallavi Khanna to host the 2nd annual M4 Transition to OBGYN Residency course for COM M4s who have been accepted to OBGYN residencies. This is an intensive two-week course that is largely taught in CHIPS, covering essential skills for entering OB residency.

As part of the College of Nursing's \$1.5 million HRSA grant for expanding Sexual Assault Nurse Examiner training in West Tennessee, CHIPS worked with grant PIs to execute a Sexual Assault Nurse Forensic/Examiner Clinical Skills Lab in CHIPS. The purpose of the educational activity is to prepare the didactically trained SAFE/SANE for clinical aspects of the adult/adolescent sexual assault medical forensic examination. West Tennessee has a significant shortage of nurses certified to meet the need for this type of trauma-informed care, and CHIPS is proud to work with the College of Nursing to address this need.



ADMINISTRATION AND OPERATIONS HIGHLIGHTS

The Academic Year 2021-2022 saw the beginning of a return to normal operations for health care simulation events at CHIPS. With the rise and fall of COVID-19 cases in the Memphis-area, we continued to adapt and overcome the obstacles in our way. Although the continual changes were demanding, our team was able to adjust quickly and continue to provide world-class simulation opportunities for our learners. Below are a few of the highlights for the year.

For the past two years, the College of Medicine course PCM 20430 has requested specific dermatological conditions for second year students to see, touch, feel, and identify prior to clinical experiences. In September 2021, CHIPS operations staff were tasked with creating the following pathologies: psoriasis, purpura, lymphangitis, syphilis, bullous pemphigoid, atopic dermatitis, seborrheic keratosis, and shingles. The focus of the lab was to identify these dermatological pathologies across a range of skin tones. In order to create the pathology, the team utilized the free resources “Mind the Gap- Black and brown skin” to illustrate the importance of recognizing these conditions present across a range of skin tones. Silicone, latex, tissue paper, and makeup were all used in creating these pathologies. These case-based dermatological conditions provided students the opportunity to have hands-on experience outside normal clinical rotations, without which they likely would not have seen such a wide variety of dermatologic diagnoses.

In March of 2022, CHIPS partnered with the College of Medicine Office of Admissions to develop the first offering of the Learning and Engagement for Aspiring Physicians (LEAP) Program. The initial LEAP Program participants were students from the Memphis Challenge, which is a program that provides mentorship, coaching, and guidance to high-achieving high school students of color in the Memphis area. This event supported 35 students from the program who were interested in a career in the healthcare industry. While CHIPS was able to support five different hands-on skill stations for these learners, the biggest impact was the ability to represent our university in our local community. “We are hopeful that this initial LEAP event is the first in a long line of similar opportunities for students of color in our city. We are hoping to create a pipeline program where we can continue to encourage students to see a career in healthcare and make a difference in the Memphis community.”
-Jarrod Young



Teresa Britt and Katie Porcaro worked quickly to assist Dr. Danielle Tate and her clinical team to create videos in CHIPS demonstrating delayed cord clamping protocols. Dr. Danielle Tate and her team created three cases in which delayed cord clamping protocols were initiated: patient 36 weeks with category 2 tracing, patient 34 weeks and baby with trisomy 21, and patient 34 weeks unscheduled cesarean delivery of a baby with trisomy 21. CHIPS provided simulated environments for these cases, which included a Labor and Delivery suite and Operating Room. All three videos were recorded using SimCapture and the various cameras from each simulated environment were spliced together using Adobe Premiere. These videos were shown at the Tennessee Initiative for Perinatal Quality Care Conference in Franklin, TN on March 7-8, 2022.

During this academic year, CHIPS was able to partner with Resuscitation Quality Improvement (RQI) and extend the course offerings for computer-assisted life support checkoff programs. CHIPS is now able to offer computer-assisted checkoff for Pediatric Advanced Life Support (PALS) training for our learners and clinicians. These computer-assisted checkoffs allow learners to complete the required didactic coursework for their license asynchronously and then come into checkoff on the skills portion of their exam with a computer-aided manikin that tracks their skill acquisition. With the addition of PALS, CHIPS now has the complete suite of life support courses offered for our learners. Over the last two years, CHIPS has averaged more than 1,000 licenses each year without the need for additional staff resources or space allocation.

ASSESSMENT AND RESEARCH HIGHLIGHTS

Teresa Britt and Kuan Xing, in collaboration with Kim Leighton, completed a content validity study for the newly developed Simulation Educator Needs Assessment Tool (SENAT). The SENAT survey is the first step in the CHIPS annual simulation professional development process. The survey data will provide CHIPS with the information needed to best create professional development for our faculty as well as assist individuals in obtaining personalized mentoring from the CHIPS Team. In order to validate the tool, the SENAT was shared with over 80 Certified Healthcare Simulation Educator- Advanced (CHSE-A) for their feedback. This group is in the process of submitting for publication of the tool and the study.

In June, Tim Dotson, PI, Kuan Xing, Co-PI, and Amy Rush, Co-PI, were awarded a Diversity and Inclusion Mini Grant for the project, "The Power of We Townhall Meeting: A Campus Discourse on Diversity, Equity, and Inclusion in Healthcare Simulation." Funded by UTHSC Office of Inclusion, Equity, and Diversity, the team will film a

documentary interview of different stakeholders in our simulation community. In February 2023, the team will hold a town hall meeting to premiere the documentary and bring in a simulation expert in Diversity, Equity, and Inclusion (DEI) to have conversations with our stakeholders about DEI for promoting a more diverse and inclusive education environment.

CHIPS sponsored three different simulation webinars over the course of the 2021-2022 academic year. The first was on September 8th, 2021, when Dr. Christine Park presented on "Healthcare Simulationist Code of Ethics- What's in it for Me?" The second was Dr. Yoon Soo Park who presented on "Leveraging Everyday Curriculum and Assessment to Drive Programs of Educational Research for Health Professionals." The final presentation was on the Simulation Medallion. Three of our UTHSC faculty completed the initial Simulation Medallion program: Dr. Kelsey Fredrick (COP), Dr. Anna Q. Allen (COM/GME) and Simran Flagg (COD).

PUBLICATIONS

Britt T and **Pitt J**. "7.4 Scenario Case Development." Defining Excellence in Simulation Programs, 2nd edition. Lippincott Williams and Wilkins, 2022.

Hohmeier KC, Barenie RE, Hagemann TM, Renfro C, **Xing K**, Gatwood J. A social media microinfluencer intervention to reduce covid-19 vaccine hesitancy in underserved Tennessee communities: A protocol paper. J Am Pharm Assoc. Published online [November 26, 2021]. doi:10.1016/j.japh.2021.11.028

PRESENTATIONS

Biffar D, Decker S, Foy D, Kardong-Edgren S, and **Young J**. (January 2022). "Wearing Multiple Hats: How We Juggle the Five Key Roles in Simulation." International Meeting on Simulation in Healthcare. Los Angeles, CA. (Livestream Panel).

Bradford J, Dale D, MacCabe A, and Pearce T. (January 2022). "Simulation in Health Professions: Drafting your Case Development." International Meeting on Simulation in Healthcare. Los Angeles, CA. (Live Workshop).

Brauer N. "Implementation of Asset Maintenance Programs." SimGHOSTS USA 2021. Fort Wayne, IN.

Britt T, **Claxton V**, **Young J**, and **Rush A**. (August 2021). "Coffee and Conversations: Self-Awareness and Team Building." Employee Relations Series at UTHSC. (Virtual Panel).

Britt T and **Scott D**. (January 2022). "Simulation Medallion- A Digital Badging Professional Development Opportunity." International Meeting on Simulation in Healthcare. Los Angeles, CA. (Virtual Panel; Prerecorded Session).

Britt T and **Young J**. (January 2022). "SSH Presents: Exemplary Practices in SSH Accreditation- CHIPS Onboarding." International Meeting on Simulation in Healthcare. Los Angeles, CA. (Panel).

Cavanaugh S, Follmer A, Lowther M, Maxkenzie K, and **Young J**. (November 2021). "Enhance Your Resume and CV: A Two-part Workshop for the Operations Specialist." SSH Sim Series Webinar. (Invited Virtual Panel).

Cavanaugh S, Follmer A, Lowther M, Maxkenzie K, and **Young J**. (December 2021). "Enhance Your Resume and CV: A Two-part Workshop for the Operations Specialist." SSH Sim Series Webinar. (Invited Virtual Workshop).

Dotson T, and **Rush A**. (January 2022). "More Than a Character: Case Development from a Playwright's Perspective." International Meeting on Simulation in Healthcare. Los Angeles, CA. (Live Workshop).

Follmer A, Herrera R, Konzelmann J, **Porcaro K**, and **Young J**. (July 2022). "Is There a Checklist for That? Driving Process and Progress with Checklists." SimOps 2022. Cincinnati, OH. (Workshop).

Hobbs K, Klevan J, Clark L, **Xing K**, Swanson A, Knickle K, and McNaughton N. (June 2022). "A Review of the 2021 Literature." 2022 ASPE annual conference, New Orleans, LA. (Plenary Session).

Kuszajewski M, Dongilli T, and **Young J**. (January 2022). "Pathway to Excellence: Preparing Your Center for Accreditation." International Meeting on Simulation in Healthcare. Los Angeles, CA. (Workshop).

Mosher S, **Young J**, **Pitt J**, and **Britt T**. (January 2022). "The Logistician Role: An Innovative Solution to Simulation Coordination." International Meeting on Simulation in Healthcare. Los Angeles, CA. (Livestream Panel).

Norris M, Cavanaugh S, Follmer A, Kutzin J, and **Young J**. (July 2022). "Time is Up: Documenting SOS Production vs Admin Time." SimOps 2022. Cincinnati, OH. (Panel).

PRESENTATIONS CONTINUED

Orr J. "Simulation Preparation from A-Z." SimGHOSTS USA 2021. Virtual Conference.

Paschal B and **Brauer N.** "Stop Living on the Edge: Create a Custom Preventative Maintenance Program." SimGHOSTS USA 2021. Fort Wayne, IN.

Pitt J and **Britt T.** "SP Modality and Virtual Simulation: An Expert Panel Presentation." Tennessee Simulation Alliance. Virtual Webinar. July 2021.

Pitt J and **Britt T.** (January 2022). "Simulation Advisory Committee and SP Advisory Committee: Our Story." International Meeting on Simulation in Healthcare. Los Angeles, CA. (Virtual Panel; Pre-recorded Session).

Renfro C, Beall J, Barta L, and **Young J.** (August 2021). "Behind the Curtain: Operations and Safety Considerations for Pharmacy Simulations." HealthySimulation.com. (Invited Virtual).

Sekandarpour F, **Brauer N,** and Fischer A. "Manikin Connectivity: Simulation Networking Solutions Panel." SimGHOSTS USA 2021. Fort Wayne, IN.

Waller M, Tucker J, Bradford J, Xing K, and **Britt T.** (January 2022). "Exploring cognitive load perception in baccalaureate nursing student participant and observation roles using a participant proxy simulation design." International Meeting on Simulation in Healthcare. Los Angeles, CA. (Research Abstract).

Watts P, Spain A, Schneidereith T, Nawathe P, Herrington A, Wilson L, Stiner J, **Young J.** (January 2022). "Joining the A-Team: Seeking Advanced Certification in Simulation." International Meeting on Simulation in Healthcare. Los Angeles, CA. (Preconference Workshop).

Xing K. (January 2022). "Examining the effect of gender and race concordance on assessing undergraduate medical students' communication skills." International Meeting on Simulation in Healthcare. Los Angeles, CA. (SSH Virtual Scholars Session).

Xing K, Pitt J, Bradford J, Rush A, Dotson T, Mosher S, and **Britt T.** (June 2022). Developing standardized/simulated Patients (SPs) to better portray the social determinants of health (SDoH) using poverty sim. 2022 ASPE annual conference, New Orleans, LA. (Workshop).

Xing K, Jasmin H, and **Britt T.** (January 2022). "Synthesizing Prebriefing Theory and Practice in Healthcare Simulation: A Scoping Review." International Meeting on Simulation in Healthcare. Los Angeles, CA. (Research Abstract).

Xing K, Swanson A, Nicholas C, and Clark L. (June 2022). Invited Session, "Research II: Foundations of Quantitative and Qualitative Research Methods" 2022 Association of SP Educators (ASPE) annual conference, New Orleans, LA. (Preconference Workshop).

Young J. "Flexing our Muscles: The Future of Simulation Operations." CALSIM 2022. Virtual Conference. April 1, 2022. (Invited Speaker).

Young J and **Correale A,** (January 2022). "CHIPS Guide to Sim Ops." International Meeting on Simulation in Healthcare. Los Angeles, CA. (SimVentors Expo).

Young J, Lowther M. (January 2022). "CHSOS Blueprint Course." International Meeting on Simulation in Healthcare. Los Angeles, CA. (Preconference Course).



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