



# A reflection of success to foster the future

# Center's Mission | We will provide creative, innovative, simulation-based education and scholarship for UT Southwestern and our community.

*In this high-fidelity, simulation-based operating room, which authentically replicates the real ORs, learners practice teamwork and communication skills, intraoperatively.*

## A year in review

The UT Southwestern Simulation Center brings the future of health care education to the here and now. In our third year of operation and service to the UTSW community, the 49,000-square-foot Simulation Center continued to fulfill our vision of improving patient care while finding innovative ways to train health care providers, students, and other trainees, both in-person and

virtually. Our focus remains on providing exceptional educational offerings for all specialty areas and disciplines.

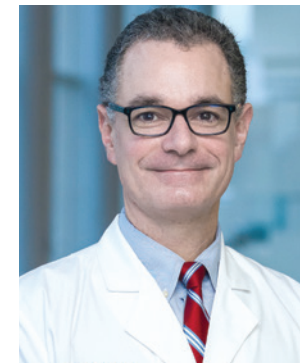
During this year, we recognized tremendous growth within all three strategic domains: innovation, professional development, and scholarship. We fostered partnerships with new departments, units, and campuses. These partner-

ships have proved valuable by allowing us to expand our simulation offerings and advance our Innovation Lab. Additionally, the Center found innovative ways to execute simulation activities in the face of limitations during the continuing COVID-19 era. As we transform health care education through cutting-edge techniques, our efforts continue to be focused on becoming nationally renowned.

Our strategic framework aligns with UT Southwestern's mission, vision, and strategic goals, including our shared objectives of improving the future of health care and patient-centered care. We continue to concentrate our efforts on innovation, professional development, and scholarship.



**Daniel Scott** – M.D.,  
FACS, Director



**Krystle Campbell** – M.S.,  
CHSE, Director of Operations



**In the 2020–21 academic year, our Center saw: 39% year-over-year growth; 1,281 individual simulation events; 21,603 learner encounters; 15,154 instructional hours.**

Oxygen is applied to a full-body, adult high-fidelity manikin. These manikins are technically advanced, with the ability to replicate human physiology through manipulatable vitals, breathing, pulsing, and a multitude of other physiological parameters.



Daniel Scott, M.D. (right), and Rahm Heymann, B.S., collaborate in the Center's Innovation Lab to refine a 3D-printed mold to pour ATLAS pads, while Kirk Atkinson (background) works with a 3D printer.



The picture shows a 3D-printed model and the resulting poured ATLAS pads, created to support research efforts.



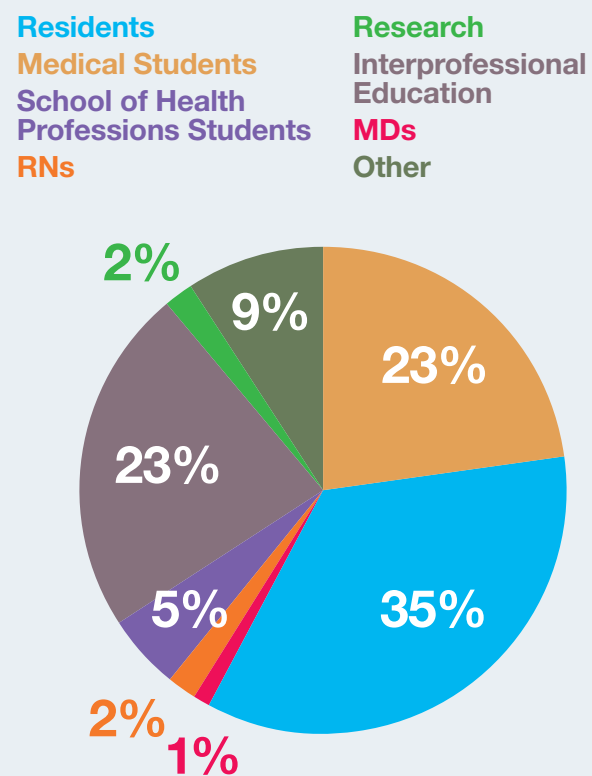
## A reflection of success to foster the future

Throughout the 2020-21 academic year, our Center led regional partnerships in the execution of interprofessional simulation activities while continuing to refine and grow campuswide simulation-based programs for a variety of different health profession learners. These learners included faculty, residents, fellows, nurses, and physical therapists, as well as medical, PA, nursing, and other allied health students.

The Center had offerings that involved a variety of different simulation modalities, including:

- Procedural-based sessions, such as suturing, advanced laparoscopic training, robotic surgery, trachea care, central venous line insertion, airway management, and ultrasound
- Scenario-based simulations focused on domains such as team dynamics, professionalism, communication, handovers, and crisis resource management
- Other sessions that included high-stakes simulated patient encounters, in which learners were objectively assessed on performance criteria while interacting with expertly trained simulated patients

## Percentage Breakdown of 1,306 Activities by Learner Groups



## Strategic Domains

### Innovation

**Research and Development** | UTSW investigators, in collaboration with the Association for Surgical Education (ASE), did pioneering model innovation, curriculum development, and transferability testing in an effort to prepare the Advanced Training in Laparoscopic Suturing (ATLAS) program for national launch.

### Other highlights:

- Our Innovation Lab created custom silicone suture pads from 3D-printed molds to enhance the durability of the materials. Iterative prototypes were tested and refined to optimize thickness, target markings, and handling characteristics.

- Surgery resident Madhuri Nagaraj, M.D., and medical student Kyle Langston led an IRB-approved study to assess the relative benefit of the ATLAS curriculum compared to existing curricula, with transferability measured in a simulated operating room environment using a laparoscopic Nissen fundoplication model.

**Curricula** | Capitalizing on our virtual opportunities, simulationists from across the region joined together for a novel online interprofessional education session on discharge planning. The goal of this session was for students from four different schools on three different campuses (UT Arlington, Texas

Summing up the session's success, **Kim Hoggatt Krumwiede, Ph.D., UTSW Director of Interprofessional Practice and Education, noted, "Patient-centered care today requires health care professionals to work as a collaborative team. ... With more than 700 learners in attendance for this session, our data demonstrate that virtual IPE simulations are an effective way to promote interprofessional teamwork."**

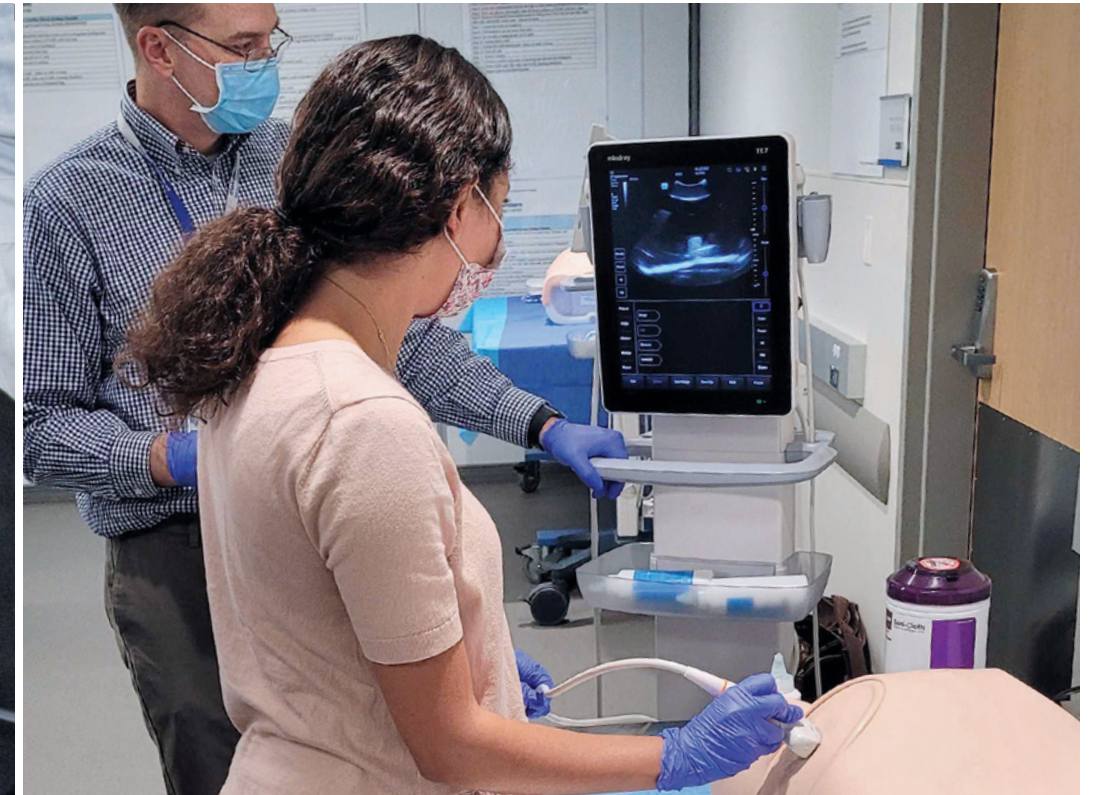
Woman's University, UTSW School of Health Professions, and UTSW Medical School) to gain teamwork skills during a particularly challenging interprofessional situation – discharge planning – which is most

effective when a team of health care workers is involved in the patient's care. After completing an online module, medical, nursing, and health professions

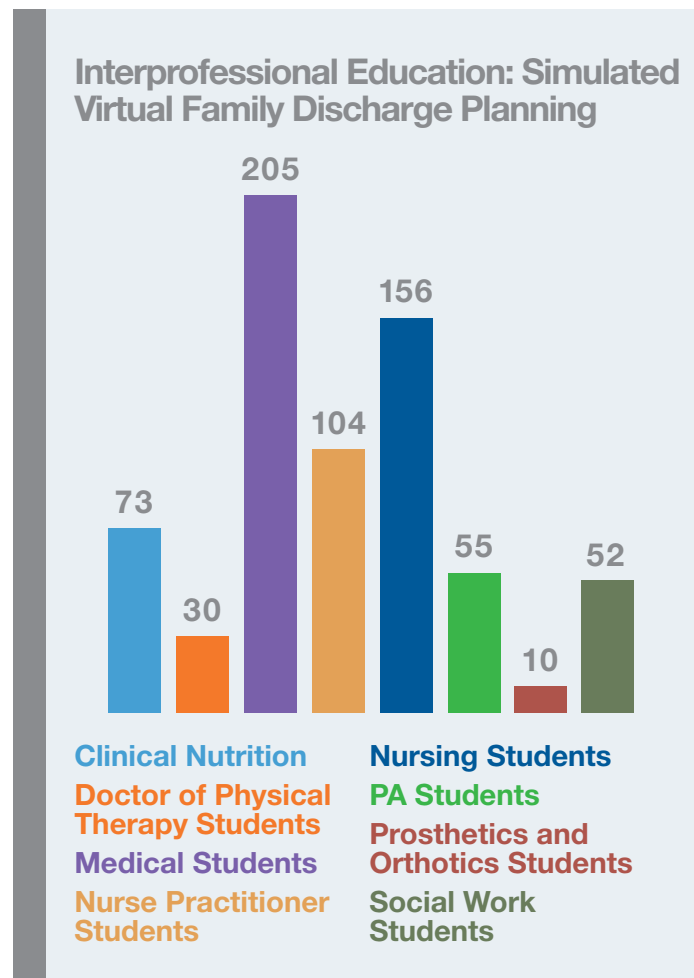
An interprofessional team works together to perform care on a high-fidelity manikin in one of the Center's simulated inpatient rooms.



Learners practice ultrasound and procedural skills on a specialized simulator called a task trainer with guidance from an expert instructor.



students attended a joint simulation session via Zoom. The students met in small teams of three to four and were charged with working as an interdisciplinary team to help a simulated virtual family prioritize options for the best residential placement for their loved one who was being discharged from an acute care hospital. Afterward, students participated in a self-led group debrief of the encounter. The session was designed to introduce students to milestones on the path to obtaining core competencies for interprofessional collaborative practice identified by the Interprofessional Education Collaborative (IPEC).



### Continuing Professional Development

**Simulation Development Series, Sim 101** | The Center continues to be committed to continuing education courses. This includes hosting novel courses for learners nationwide. Our updated Simulation 101 course trained health care education leaders across campus on how to effectively use simulation. Since January 2021, we have had 12 graduates in this program. Sim 101 provides participants with a foundation of simulation principles through education in curriculum

development, debriefing, and assessment. The course also engages graduates in the regional simulation community through mentorship and collaboration across a diverse group of interested educators.

**President's Lecture Series** | The Center was honored to be part of Dr. Daniel K. Podolsky's President's Lecture Series this past year. Our Center's leadership, Dr. Daniel Scott and Krystle Campbell, shared their simulation experiences and perspectives with the campus community in May, delivering a presentation titled "Imitating Reality: Using Simulation to Improve Patient Care." During the virtual lecture, more than

**"Simulation fosters experiential learning. Of its many applications in medical education, simulation shines in its ability to recreate medical crises and allow learners to apply team training concepts in the management of critical situations. It is through communication, leadership, and mutual support that we can impact patient care by working collectively as health care professionals. Simulation enables us to modify team behaviors to meet this objective." — Ravi Bhoja, M.D., Associate Professor, Department of Anesthesiology and Pain Management, UT Southwestern Medical Center**

200 people across campus joined to learn about the power of simulation to improve health care and gained an appreciation for the value the Center adds to our campus and the region.

# The virtual conference spotlighted passionate simulation scholars through: 12 oral presentations; 29 poster presentations; 5 “Emerging Ideas” presentations; 7 interactive workshops.

## Scholarship

### Simulation-Based Quality Improvement and Research Forum |

At the core of the Center’s efforts is advancing scholarly work through education and building a robust simulation community, rich with different perspectives, expertise, and passions. As such, the Center recognizes its critical role in being a conduit across a variety of champions from different disciplines and professions who hold a common interest in simulation. The Simulation-Based Quality Improvement and Research Forum continues to offer a venue for our community to share its diverse simulation efforts across the

region, secure mentorship, and collaborate on future initiatives.

This year, the Center hosted the fourth annual Simulation-Based Quality Improvement and Research Forum, which was conducted virtually. The event took place on May 12, 2021, and brought together more than 200 participants across campus, the region, the state, and the nation. We were honored to have as our keynote speaker Dr. Carla Pugh, a world-renowned innovator in simulation. We also included a new integral session called “Emerging Ideas.” This session enabled presenters to share their novel ideas and works in progress. An expert panel

provided their perspectives and advice on potential opportunities as well as on collaborations to enhance each presenter’s work.

### Simulation Innovation Awards (SIA) Program | Scholarly Output

**Highlight: The goal of the SIA program is to provide financial support for projects designed to facilitate the growth of state-of-the-art simulation research or curricular design. Since the deployment of the program in 2019, three projects have been funded. Awardees have disseminated their scholarship in different venues, as seen by the exceptional work of Blake Nichols, M.D., highlighted here:**

### Award-winning proposal: Rapid Cycle Crisis Resource Management: Improving Resident Acute Care Management

PI: Blake Nichols, M.D., Department of Pediatrics, UT Southwestern Medical Center

Mentor: Aditee Ambardekar M.D., Department of Anesthesiology and Pain Management, UT Southwestern Medical Center

Reflecting on the SIA program’s significance to his career, Dr. Nichols says: “I applied for and was awarded the Simulation Innovation Award early in my academic career. I am happy to report that the award provided me with several academic opportunities. Additionally, the work led to the development of a dedicated simulation-based curriculum for pediatrics residents. The SIA program allowed me to legitimize simulation as an avenue to further my academic career. Most importantly, the SIA program allowed me the opportunity to improve knowledge and confidence of pediatrics graduate medical trainees.”

**New Programs** The simulation curriculum developed for the pediatrics residency program has been adapted into a simulation-Based academic half-day session for residents. **Presentations** Dr. Nichols presented his work at the: **1** Third annual UT Southwestern Simulation-based QI and Research Forum **2** International Pediatric Simulation Society Annual Meeting **3** International Meeting on Simulation in Healthcare **Publications** Dr. Nichols has had one publication in the journal *Simulation in Healthcare*. His team is currently working on second and third manuscripts to be submitted.

## Simulation Center Staff

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**Sheilah Hill Ukpadi**  
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**Tina Tran**  
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**Wesley Witten**  
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## Simulation Governance Committee

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**Cameron Slocum**  
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**Deborah Farr**  
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The UT Southwestern Simulation Center is accredited by these organizations: the American College of Surgeons-Accredited Education Institutes (ACS-AEI) as a Level I Comprehensive Center; the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) as a Fundamentals of Laparoscopic Surgery (FLS) and Fundamentals of Endoscopic Surgery (FES) test center; and the American Society of Anesthesiology as an endorsed center to hold Maintenance of Certification in Anesthesiology (MOCA) courses.

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