



INDIANA UNIVERSITY
BLOOMINGTON



Indiana University Health

2024 Annual Report

Interprofessional Simulation Center Bloomington Regional Academic Health Center



Vision

Create the best simulation-based education experiences that lead to the best clinical and educational outcomes in Indiana and beyond.

Mission

Our mission is to create innovative simulation-based health care education programs that emphasize interprofessional collaborations to improve learning outcomes across all our learner groups, enhance patient care not only locally but throughout the world, develop research that leads to new discoveries in education and clinical care, and advance the performance of our partners while building a culture of excellence emblematic of the core values that support our service to Indiana University, Indiana University Health, and the communities we serve.

Staff

David L. Rodgers, EdD, NRP, FAHA, FSSH	Director/Assistant Professor of Clinical Medicine
Matthew Needler, BA, CHSOS, CHSE	Simulation Coordinator
Shad Wiehe, EMT-B	Simulation Technician
Isabel Deem, BS, EMT-B	Simulation Technician (PRN)
Alejandra Gomez-Moreno	Cox Legacy Scholar Intern
Emily Xiao	Cox Legacy Scholar Intern
Hannah Short	Cox Legacy Scholar Intern

Leadership (Simulation Executive Committee)

Katherine M. Hiller, MD, MPH

Associate Dean, IU School of Medicine - Bloomington
Regional Director, IU School of Medicine - Bloomington
Professor of Emergency Medicine
Chief Academic Officer, IU Health - Bloomington

John Sparzo, MD, MBA

Chief Medical Officer, Interim President - IU Health South Central Region

Angela Opsahl, DNP, RN, CPHQ

Interim Associate Dean, IU School of Nursing - Bloomington
Associate Professor of Nursing





A Note from the Director

2024 marked another great year of progress for the Interprofessional Simulation Center. The Center set records for the most learners (8,979) and contact hours (29,890), making the Center one of the busiest simulation programs in the region. Other major highlights included:

- Replacement of nine outdated legacy simulators with all new Laerdal Medical simulators, including infant, obstetrical, adult, and child simulators, plus one of the first installations in the world of the new SimMan Critical Care manikin.
- The success of last year's Cox Legacy Scholars programs was multiplied this year with three new Cox interns – Alejandra Gomez-Moreno, Emily Xiao, and Hannah Short. Their assistance in the Center has been exceptionally valuable.
- We introduced a new part-time sim tech. Isabel Deem joined the staff and has already made a tremendous impact. We also want to say thank you to former sim tech Elizabeth Bawi Lung who moved to a full-time position in IU Health.
- We finally introduced VR simulation with a new program to support perioperative education. The product was generously supported by a grant from the IU Health South Region Foundation.

In January 2024, Simulation Coordinator Matt Needler was officially recognized at the International Meeting for Simulation in Healthcare for achieving his Certified Healthcare Simulation Educator (CHSE) credential, making him part of select group to hold both CHSE and Certified Healthcare Simulation Operations Specialist (CHSOS) titles. During the same conference, I was honored to be inducted as a Fellow of the Society for Simulation in Healthcare (FSSH).

With steadily increasing activity, continued improvements in simulation resources, and a growing interest in finding new ways to integrate simulation into learning events, we anticipate 2025 will be even more eventful.



Thank you for your support of the Interprofessional Simulation Center and your commitment to simulation-based learning.

David L. Rodgers, EdD, NRP, FAHA, FSSH
Director, Interprofessional Simulation Center
Assistant Professor of Clinical Medicine

Interprofessional Education



Healthcare is a team activity. As our name suggests, the Interprofessional Simulation Center emphasizes the team aspects of providing patient care. At the pre-licensure level, we conduct simulations to give medical students, nursing students, and social work students the chance to learn with, from, and about each other and their roles in patient care. For many, these simulations represent the first opportunities where they get to work with other health professions.

The Center's work with IU Health includes conducting in situ, or on location, simulations. These simulations bring together the whole healthcare team. IU Health in situ simulations increased to 29 sessions in 2024. IU Health also conducted several more interprofessional simulations in the Center to allow teams to practice together. Emphasis during debriefing is on team performance, not individual actions.

161
IPE
Sessions



29
In-Situ
Sessions



HSBsim@iu.edu



Education



Simulation-based learning is a vital part of many educational program curricula, both at the pre-licensure level and for continuing professional development. The Interprofessional Simulation Center works with educators to help them find the best ways to integrate simulation into their programs.

In 2024, several simulation-based learning programs were introduced or expanded.

- IU Health LifeLine Emergency Medical Services started using the Interprofessional Simulation Center to supplement their in-house simulation capabilities. The LifeLine simulations involved picking a patient up in the simulation center, transferring them to an ambulance, and taking them “home” to the Center’s apartment.
- The Center’s apartment continues to get increased use in addition to the Lifeline project. Nursing and Social Work have continued to use this innovative space to enhance home care visits and assessments.
- Additional ultrasound equipment created more opportunities for medical students and faculty to hone their imaging skills.
- A new interprofessional team education program for trauma care was introduced.

With the Interprofessional Simulation Center having completed its third full year of operation, simulation-based learning is now an integral part of many education programs at the Bloomington Regional Academic Health Center.



HSBsim.iu.edu



Top 40 words used in 2024 learner survey question “What was the best part of the simulation experience.” (Word Cloud above)



Research

Publications

Simulation-based scholarly output and research was published by Bloomington-based authors from the School of Medicine, the School of Nursing, and the Interprofessional Simulation Center. This included publications in simulation's premier journal, *Simulation in Healthcare*. Collaborations were key to the success of the 2024 output with involvement of authors from not only IU Bloomington, but also IU Indianapolis and other simulation programs outside Indiana. In total, six peer-reviewed publications were published by Bloomington-based authors that addressed simulation.

Publications for 2024 (with Bloomington-based authors highlighted in **Bold**)

- Xavier N, Quinn J, Amidon B, **Barnes R**, Dunning L, INACSL Standards Committee. The Impact of Professional Integrity on Simulation Learning Outcomes—A Systematic Review Protocol. *Clinical Simulation in Nursing*. 2024 Jan 19:101508.
- Gardner AK, **Rodgers DL**, Steinert Y, Davis R, Condrón C, Peterson DT, Rohra A, Viggers S, Eppich WJ, Reedy G. Mapping the Terrain of Faculty Development for Simulation: A Scoping Review. *Simulation in Healthcare*. 2024; 19(1S):S75-89. PMID: 38240621.
- Ngo TP, Draucker CB, **Barnes RL, Kwon K, Reising DL**. Peer emotion in collaborative simulation among nursing students. *Journal of Nursing Education*, 2024;63(11), 746-754. PMID: 39510088.
- Ngo TP, Draucker CB, **Barnes RL, Kwon K, Reising DL**. Peer collaborative clinical decision making in nursing simulation: A theoretical framework. *Journal of Nursing Education*, 2024;63(7), 436-443. PMID: 38979733.
- **Rodgers DL, Bohrer MB, Morales AA, Needler MD, VandeKoppel P**. Using Bibliometric Analysis to Map the Impact of a Simulation Program's Published Scholarly Works. *Simulation in Healthcare*. 2024;19(3):179-187. PMID: 38345225.
- **Rodgers, DL**, Hernandez J, Ahmed, RA. Artificial Intelligence and the Simulationist: More Iterations Needed. Response to Bhutiani, Hester, & Lonsdale [Letter]. *Simulation in Healthcare*. 2024;19(4);260. PMID: 39073873.



Visit our website at

<https://hsbsim.iu.edu/education/research/>

for a full listing of all IU Bloomington-based simulation research.

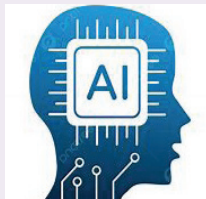
VR Simulation Introduced

Virtual Reality (VR) simulation using an immersive environment viewable through goggles and using hand controllers was introduced in 2024. Part of a grant supporting perioperative education from the IU health South Region Foundation, PeriOp Sim allows users to practice surgical case flow as a scrub tech or scrub nurse. With dozens of cases available, the program scores participants on their efficiency of instrument presentation and awards extra points for anticipation of what the next surgical instrument will be.



Research

Presentations



Artificial Intelligence (AI) was the hot topic for 2024. Following up on the Interprofessional Simulation Center publication on using AI that was published in late 2023, Center team members David Rodgers and Matthew Needler conducted several conference presentations, workshops, and webinars on AI in simulation.

- **Rodgers DL, Needler MD**, Hernandez J, Poore J, **VandeKoppel P**, Ahmed, R. (2024, Jan. 22). AI in Simulation Design: Workshop on using CHATGPT to Develop a Simulation Scenario. Workshop presented at the International Meeting on Simulation in Healthcare, San Diego, CA.
- **Rodgers DL**. (2024, Feb. 27). Designing Medical Simulation Scenarios with AI and ChatGPT. Webinar presented for HealthySimulation.com.
- **Rodgers DL**. (2024, May 8). AI in Simulation Design: Using ChatGPT to Develop Simulation Scenarios. Presentation at the International Pediatric Simulation Symposium and Workshops. Denver, CO.
- **Rodgers DL**. (2024, June 17 & 18). Visiting Professor at Alberta Children's Hospital, University of Alberta, Calgary, AB, Canada. (One workshop and one presentation).
 - o Exploring the Potential of AI in Simulation-based Learning (Workshop)
 - o Artificial Intelligence: Another Tool for the Simulationist (Presentation)
- **Needler MD**. Using ChatGPT to Help Write Simulations. (2024, July 18). Workshop presented at Society for Simulation in Healthcare SIMOPS 2024, Aurora, CO.
- **Rodgers, DL**. (2024, Oct. 18). Using Generative AI to Create Simulation Cases. Virtual Hot Topics in Simulation Education Symposium: Leveraging Artificial Intelligence to Advance Simulation-Based Health Professions Education conference presented by NYSIM: New York Langone Hospital.
 - Reed JM, **Rodgers DL**, Triola M, White A, Ark TK, Pradham D. (2024, Oct. 18). Panel Discussion: Future of AI in Simulation. Virtual Hot Topics in Simulation Education Symposium: Leveraging Artificial Intelligence to Advance Simulation-Based Health Professions Education Conference presented by NYSIM: New York Langone Hospital.
 - **Rodgers DL**. (2024, Nov. 7). AI in Simulation: Practical Possibilities and Potential Pitfalls. Keynote presentation at the International Pediatric Simulation Society Virtual Conference 2024.
 - Patel A, **Rodgers D**, Real J, Leung J. (2024, Nov. 7). AI and Technology: Bridging the Gap Between Innovation and Practice in Pediatric Simulation. Panel discussion at the International Pediatric Simulation Society Virtual Conference 2024.

In addition to these presentations, Center Director David Rodgers was featured in three podcasts during 2024.

- **Rodgers DL**. (2024, Mar. 1). Episode 17: Drs. Janice Palaganas and David Rodgers, Must-hear Perspectives from IMSH 2024. Laerdal Medical: Million Lives Podcast. Available at <https://laerdal.com/us/information/one-million-lives-podcast/>
- **Rodgers DL**. (2024, May 7). AI's Role in Redefining Medical Professional Development with Dr. David Rodgers. The Sim Café. Available at <https://innovativesimsolutions.com/podcasts>
- **Rodgers DL**. (2024, Sept. 19). AI in Pediatric Simulation. International Pediatric Simulation Society Podcast Series. Available at <https://ipss.org/Podcast>

Highlights



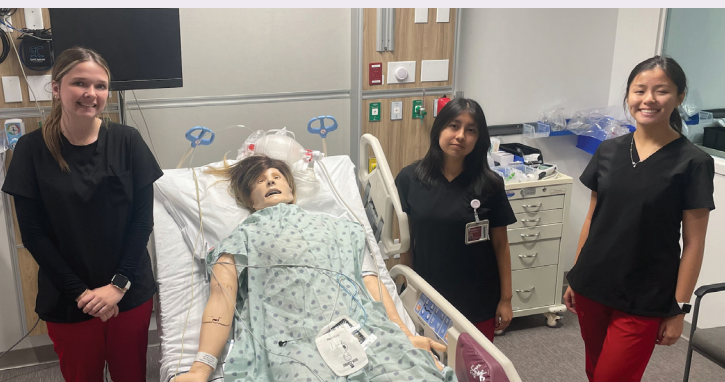
Highlights



The 2024 national SimGHOSTS conference for simulation technology specialists was hosted by the IU Health Simulation Center at Fairbanks Hall in Indianapolis. With the rare chance for a national conference so close to Bloomington, the entire Interprofessional Simulation Center team was able to attend.

The Cox Legacy Scholars program provides paid internships to help them develop their careers. The Center had its first Cox Scholar in academic year 2023-2024. For the current academic year (2024-2025) the Center has three Cox Scholars – Alejandra Gomez-Moreno, Emily Xiao, and Hannah Short. All three are pursuing careers in healthcare. They are pictured to the left in the middle photo

Sim Coordinator Matt Needler was named co-chair of the Society for Simulation SimOps 2025 conference. This national conference focuses on technical innovations in simulation.



The Health Sciences Building Interprofessional Simulation Center is on **Instagram**. Follow us at [hsbsim](https://www.instagram.com/hsbsim).

Simulation Center Adds Value Across IU and IU Health

The Interprofessional Simulation Center adds additional value to IU and IU Health by supporting other activities.

The Center is frequently cast as a medical location for student film projects and IU Health promotional videos and photo sessions.

Supporting healthcare provider pipeline programs, the Center plays a key role in introducing health professions careers to students from across the region, especially those from groups who are under represented in medicine.

The Center conducted tours for groups from IU, IU Health, and the community. These included activities for board leadership members, staff leadership teams from across the IU systems, and elected officials and other government representatives. One example is shown to the right with Indiana State Senator Shelli Yoder, shown alongside IU Health South Regional President Denzil Ross and Center Director David Rodgers.



Metrics & Outcomes

2024 Performance Metrics



736 Sessions



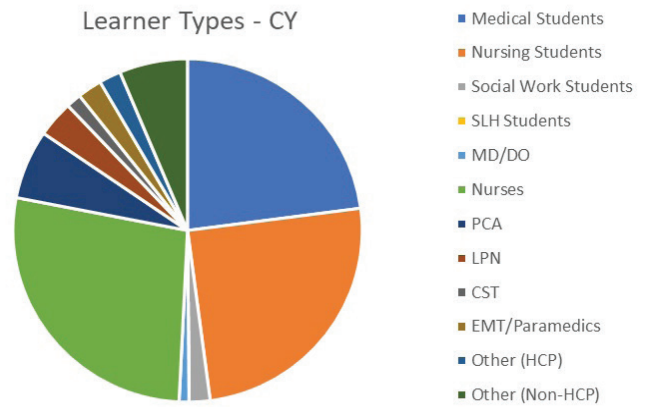
8,979 Learners



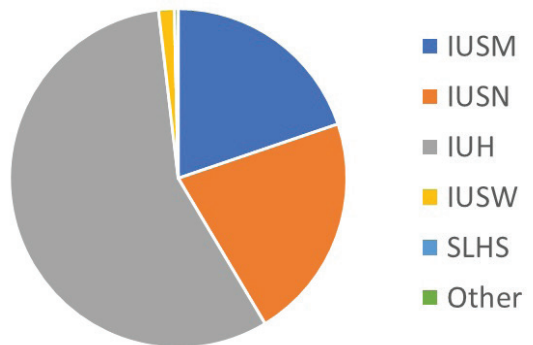
29,890 Contact Hours



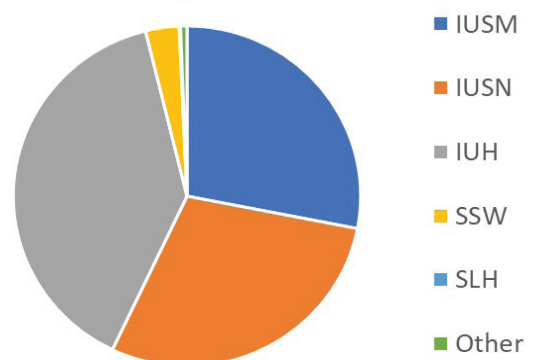
Learner Types - CY



Contact Hours by Sponsor - CY



Session Sponsors - CY



Learner Surveys Highlight Safe Learning Environment

Creating a safe learning environment is a priority in simulation-based learning. Learners frequently comment on our success in achieving this.

I felt like this was a safe learning environment and a simulation to learn from mistakes.

What was best was constructive criticism and feeling like it was a safe environment to apply my knowledge.

The best part was getting the chance to be hands-on in a safe environment.

This was very much like in real-life and I learned a lot and it felt like a very safe place to make mistakes and learn from them.

It was a low stress environment where I felt comfortable to make mistakes and learn.

It was a safe environment to apply my knowledge

2024 (1 to 5 scale with 5 being the best)

I now know what to do in similar clinical settings	4.5
I can do what was taught in the session right now.	4.4
I believe it will be worthwhile to do what was taught in my role.	4.8
I think I can do this on the job.	4.4
I intend to do this in my role.	4.6
I got feedback from the instructor on what I did well and what can be done differently to improve my performance.	4.7
I felt this was a safe learning environment where I could learn from my mistakes	4.8
Overall, I thought the session was a high-quality learning experience that met its objectives.	4.8

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