ACS Surgeons and Engineers: A Dialogue on Surgical Simulation Meeting promoted collaboration between surgeons, surgical educators, academic engineers, and the simulation industry to improve simulation-based surgical education and training.

The 2025 ACS Surgeons and Engineers: A Dialogue on Surgical Simulation meeting was held in person at the ACS Headquarters from March 22 - 23 with remarkable success. The Surgeons and Engineering Committee of the ACS Division of Education served as the Program Committee for this meeting, and 130 attendees from the United States and 10 other countries joined the meeting to discuss technology-enhanced surgical education with simulation.

The keynote address, "Forging Partnerships, Transforming Care: Engineers and Surgeons in the Digital Health Revolution," was delivered by Bijan Najafi, PhD, MSc, Professor of Surgery at the University of California, Los Angeles. Dr. Najafi's presentation explored how the partnership between engineers and surgeons serves as a catalyst for redefining surgical training and advancing patient care.

The Special Panel, "How to Build Better Simulators – Part 3," which was moderated by John T. Paige, MD, FACS, Professor of Clinical Surgery at Lousiana State University Health New Orleans School of Medicine built upon last year's panel discussion, and included three experts with significant experience in productive partnerships between surgeons and academic and industry engineers. The Panelists discussed overcoming barriers to developing multi-institutional consensus on simulator standards, simulator metrics, and learning objectives. The expert panelists were Dmitry Nepomnayshy, MD, MSc, FACS, Professor of Surgery at the University of Massachusetts Chan Medical School and Lahey Hospital & Medical Center; Doga Demirel, PhD, MSc, Associate Professor and Director of the Virtual Reality, Interactive Simulation, and Biomedical Lab in the School of Computer Science at the University of Oklahoma; and Tansel Halic,

PhD, Senior Software Engineer at Intuitive Surgical. This discussion was the final of a three-part series, and panel moderators will work on publishing the findings from the discussions.

The debate, "Is 3D Printing Still Valuable in Surgical Education?" was moderated by Paul Jeziorczak, MD, MPH, FACS, FAAP, Director of Surgical Simulation and Associate Program Director General Surgery Residency at the University of Illinois College of Medicine at Peoria. The debate examined the successful application of 3D printing in surgical education and identified potential barriers to its widespread adoption. The "Pro" side of the debate was presented by DJ Traina, Interim Director of Technology at the University of Washington Medical Center Clinical Additive Manufacturing Program. The "Con" side of the debate was featured by Charles J. Aprahamian, MD, Surgeon-in-Chief at the Children's Hospital of Illinois.

The Cognitive Task Analysis (CTA) Session explored the application of the CTA process as a framework for engineers and surgeons to collaborate in defining the essential elements and metrics of surgical simulators. The session speakers were Robert Sweet, MD, FACS, MAMSE, Professor of Urology, Chief Division of Healthcare Simulation Science, Executive Director of WISH and CREST at the University of Washington; David Hananel, BSEE, BACS, Director, Center for Research in Education and Simulation Technologies at the University of Washington; and Victoria Roach, PhD, Research Assistant Professor in the Division of Healthcare Simulation Science at the University of Washington.

A total of 103 research abstracts were submitted in four categories: Research, Research in Progress, Challenges in Technology-Enhanced Surgical Education, and Promoting Technology and Collaboration. Fifteen highly-scored abstracts were presented during two oral presentation sessions, and 43 outstanding abstracts were presented as poster presentations. Several oral and poster presentations were made by young investigators, including medical/surgical trainees and engineering students. The presented abstracts are now available on the Surgeons and Engineers Meeting webpage for the public. https://www.facs.org/for-medical-professionals/conferences-and-meetings/surgeons-and-engineers/2025/abstracts/

Twenty-four simulators/models were submitted to the 2nd Do-It-Yourself (DIY) Simulator/Model Competition. The competition highlighted the innovative spirit of the surgical simulation community and garnered much interest from attendees. The first-place awardee was Layla Triplett, M.Ed, from Duke University SEAL for the "Inguinal Hernia Simulator." The People's Choice award, as voted on by meeting attendees, was awarded to Jeremiah Egolf, BSBME, from Boston Children's Hospital for "Open Spina Bifida Fetoscopic Repair Simulator."

Among the 130 attendees, 40 completed the post-meeting feedback survey. 97.5% of the survey respondents rated the meeting overall as good or above and responded that the program content was relevant to topics concerning both surgeons and engineers. 97.5% of the survey respondents indicated they are inspired to attend future Surgeons and Engineers Meetings.

BRC exhibited at the meeting. The ACS Division of Education and Surgeons and Engineers Committee thank our exhibitor.

The next ACS Surgeons and Engineers Meeting is scheduled for March 10-11, 2026, at ACS Headquarters in Chicago, IL. It will consist of a 1.5-day main meeting and optional half-day workshops on specific topics.

For additional information, please visit the meeting's webpage (www.facs.org/surg-eng) or contact Gyusung I. Lee, Ph.D., Co-Program Chair of the Surgeons and Engineers Meeting, at glee@facs.org