

**Virtual ACS 2021 Surgeons and Engineers: A Dialogue on Surgical Simulation Meeting
Challenges in Surgical Education**

Bridging the AI Chasm in Surgical Simulation: Are Surgeons and Engineers Sufficient?

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Background: Machine learning and Artificial Intelligence (ML & AI) methods are critical for advances leading to next generation surgical simulation.

Current Challenges: Despite the enormous potential ML & AI methods hold for technology-enhanced surgical education, one major challenge limits its advance -- the critical need to educate surgeons and engineers with cross-disciplinary concepts to enable effective collaborative research. Specifically, surgeons must understand fundamentals of data science for AI in surgical education. On the other hand, engineers must understand how technology to enhance surgical education are evaluated; this includes study design, bias, validation methods, and how technology impacts outcomes in surgical education. This talk will illustrate these ideas, discuss an online course addressing this challenge, and identify other relevant resources that currently address them.

Need of Innovation Introduction: Scalable resources are necessary to build capacity in the form of multi-disciplinary teams for research on technology-enhanced surgical education. To address this need, we are developing an online course on fundamentals of data science for AI in healthcare. This talk will explain the challenge as a chasm between technology development and its effectiveness and utility in real-world training curricula, introduce the learning objectives for our course, and provide information on accessing it.