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Surgery Simulation for All Phases of Robotics Development

Nearly all high risk industries, such as aerospace, nuclear, and military, use simulation training to prepare their workforce to operate in a hazardous environment. The most recent high risk industry to embrace and adopt simulation training is medicine. Nearly 90% of all surgeons who use surgical robots have undergone some form of virtual reality training. In addition, engineers, marketing managers, sales reps, hospital administrators and government agencies can also utilize simulation to efficiently achieve a variety of objectives. This presentation will review the various roles of simulation for many of the stakeholders in the surgical robotics industry.

Biography

Jeffrey Berkley is the founder of Mimic Technologies, which was the first company to establish the market for robotic surgery simulation. He is well known as a leader in the fields of Haptics, surgery simulation, and real-time finite element modeling. He has published and served as a reviewer for various journals such as IEEE Transactions on Visualization and Computer Modeling, Virtual Reality, and the Electronic Journal of Haptics Research and Medical Imaging. While obtaining his Masters of Science in Biomedical Engineering from Northwestern University, he also worked for Musculo Graphics, where he developed his first real-time finite element analysis models. He continued to advance his real-time algorithms while receiving his PhD in Mechanical Engineering from the University of Washington's Human Interface Technology Laboratory. He founded Mimic Technologies upon graduation, where he then applied his knowledge of haptic feedback and continuum mechanic-based tissue modeling to surgery simulation. He also served in the Naval Reserves for eight years as a medical corpsman where he received experience in field medicine and nursing.

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