



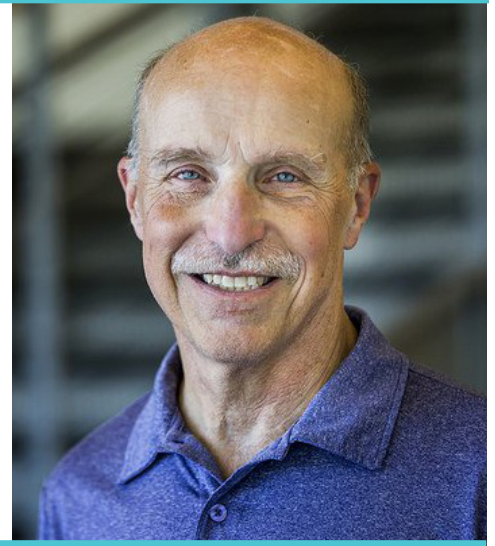
PROVIDING BETTER HEALTHCARE THROUGH SYSTEMS ENGINEERING

How Safe Is Safe Enough: Analyzing Hazards and Risks in the Real World to Inform Decision Making

James P. Bagian, MD, PE

Monday 9/13 at 4:30 PM ET

All seminars will be held in-person in IOE 1680 as well as
virtually on Zoom. For the Zoom link and password, [RSVP here](#).



No endeavor/decision is without risk. Despite the best of intentions decisions that lead to undesired outcomes (financial, human, political, reputation), many times catastrophic, occur during the operation of complex systems. Unfortunately (tragically), it is also common that the parties that made these decisions or were impacted by these undesired outcomes viewed them as unexpected when they occurred. Even worse, because the outcomes were unexpected there was generally little or no preparation for their occurrence further magnifying the extent and the impact to the individuals, organizations, and society as a whole. Since no system can be reasonably expected to perform flawlessly and with perfection all of the time, the hazards that can cause undesired outcomes should be proactively identified and their associated risks should be either mitigated or the residual risk after mitigation should be accepted by those entities responsible for the system in question. Unfortunately, history shows us that this is often not the case and arises from myriad reasons. Engineering risk analysis provides a systematic, holistic approach for addressing risks associated with complex technical systems. The irony is that few engineers are ever introduced to or learn how to apply this knowledge in their professional activities. A discussion of approaches, including real world examples, to proactively identify hazards, their associated risks, and potential mitigation approaches that can mitigate the likelihood that an unacceptable outcome will occur.

Dr. James P. Bagian is a co-founder and the Executive Director of the Center for Risk Analysis Informed Decision Engineering (RAIDE) and is a Professor in the Departments of Industrial and Operations Engineering, Aerospace Engineering, and the Department of Anesthesiology at the University of Michigan. He has extensive experience in the fields of human factors, aviation, patient and transportation safety, and risk assessment and management. Dr. Bagian was also the founding Director of the Center for Healthcare Engineering and Patient Safety at the University of Michigan. Previously he served as the first and founding director of the Department of Veterans Affairs National (VA) Center for Patient Safety and was the VA's first Chief Patient Safety Officer where he developed numerous systems and risk based tools and programs that have been adopted nationally and internationally. A NASA astronaut, he is a veteran of two Space Shuttle missions and has also served as the Chief Flight Surgeon and Medical Consultant for the Space Shuttle Columbia Accident Investigation Board as well as being an investigator for the Space Shuttle Challenger mishap investigation. He was elected to two terms as the Chair of the Joint Commission's Patient Safety Advisory Group and was a member of NASA's Aerospace Safety Advisory Panel from 2006-2018. Bagian holds a B.S. degree in mechanical engineering from Drexel University and a doctorate in medicine from Thomas Jefferson University. He is a Fellow of the Aerospace Medical Association and is an elected member of the National Academy of Engineering and the National Academy of Medicine.

This seminar series is presented by the U-M Center for Healthcare Engineering and Patient Safety (CHEPS): Our mission is to improve the safety and quality of healthcare delivery through a multi-disciplinary, systems-engineering approach. For the Zoom link and password and to be added to the weekly e-mail for the series, [please RSVP](#). For additional questions, contact CHEPSseminar@umich.edu. Photographs and video taken at this event may be used to promote CHEPS, College of Engineering, and the University.