



TEXAS TECH UNIVERSITY
Department of Mechanical Engineering

Innovation-Centered Bio-Design Approaches to Engineering Education

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Abstract: This presentation will discuss the emerging landscape of innovation-centered opportunities for engineers in cross disciplinary engineering fields. Dr. Sobel will discuss problem-based learning and innovation coupled with bio-design to address and solve some of society's most challenging problems. This approach is unique in that it prepares students at an accelerated pace for real-world challenges while centered on solid engineering principles.

Bio: Dr. Annette Sobel served as a Major General in the Arizona Air National Guard and as the Assistant to the Chief, National Guard Bureau. She served as the Chief's Advisor for Civil-Military Support during 9/11. She served as the Homeland Security Director for the State of New Mexico from 2003-2005. She is residency trained in Family and Community Medicine and Aerospace Medicine, and is a Hyperbaric Medicine Specialist, certified by the U.S. Navy. In addition, Dr. Sobel is a Human Factors Engineer, and her work has emphasized global disease surveillance, and development of novel, interactive learning and educational platforms to included development of "augmented reality" systems for learning disabilities. She supported the Defense Advanced Research Projects Agency (DARPA) for four years in a broad range of high risk/high pay off R&D to include bioinformatics, advanced algorithm development and telemedicine/virtual environments, and robotics, and mentored young scientists in the Defense Science Study Group. She serves on the World Federation of Scientists on a Permanent Monitoring Panel focused on prevention of planetary emergencies and countering acts of terrorism, and has served on several National Academy of Science committees. She was a Distinguished Member of the Technical Staff at Sandia National Laboratories, NM and is currently a Guest Scientist at Los Alamos National Laboratory, NM. She was a Distinguished Member of the Technical Staff, Sandia National Labs, NM, and an Army Astronaut Candidate in 1989. She currently is the Assistant to the Provost for Strategic Opportunities at the University of Missouri and Senior Advisor for Biosecurity Engagement at the Office of the Assistant Secretary of Defense (OTASD/NCB).



Dr. Sobel served in combat in Operation Just Cause, Panama, and supported Space Shuttle Operations at NASA-Dryden Test Flight Facility during Operation Desert Storm. She is trained as a military and civilian Flight Surgeon, and was the Senior Flight Surgeon for the 57th MEDEVAC Detachment, Fort Bragg, N.C., and responsible for all pre-hospital medical care and training. She recently retired after twenty years of military service. While serving in the military, Dr. Sobel was a member of an ambassadorial U.S. team intended to foster scientist-to-scientist collaborations with the Former Soviet Union.

Dr. Sobel served a triennium of service on the National Board of Directors of the Girl Scouts of the USA. And was a member of the Board of Directors of the World Federation of Girl Guides and Girl Scouts and the GSUSA national Science Technology Engineering and Math Advisory Board. She continues to support Boy and Girl Scouts in STEM outreach programs.

She is the recipient of the Anti-Defamation League's Distinguished Public Service Award and NATO recognition for a lifetime of service devoted to understanding the science of Weapons of Mass Destruction.

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Livermore Center 101 | 2:00 – 3:00 pm
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