**Medical Robotics, Haptic Sensors: Interactions Between Basic Science and Applied Engineering**

Roberta Klatzky, Ph.D.

Trained as a cognitive scientist, Roberta Klatzky has conducted research in how people perceive through the sense of touch and how perception guides fundamental actions such as grasping objects and navigating in space.  Her work on these topics led to collaborative interactions with engineers, with the goal of applying basic science in engineered systems.  Among her projects are navigation aids for the blind featuring haptic and auditory spatial cueing, surgical interventions guided by spatially projected medical images, and rehabilitation environments using feedback incentives to increase applied force and range of motion.  Her work has evaluated novel forms of haptic feedback such as magnetically induced forces and surfaces capable of real-time friction modulation.  Using such examples, Klatzky will talk about how mutual benefits arise from interactions between basic science and applied engineering.

Roberta Klatzky is the Charles J. Queenan Jr. University Professor of Psychology at Carnegie Mellon University, where she is also on the faculty of the Human-Computer Interaction Institute and the Carnegie Mellon Neuroscience Institute. She received a B.S. in mathematics from the University of Michigan and a Ph.D. in cognitive psychology from Stanford University. She is the author of over 300 articles and chapters, as well as authored and edited books. Her research investigates perception, spatial thinking and action from the perspective of multiple modalities, sensory and symbolic, in real and virtual environments. Klatzky's basic research has been applied to tele-manipulation, image-guided surgery, navigation aids for the blind, and neural rehabilitation. Klatzky is a Member of the National Academy of Sciences and Fellow of the American Academy of Arts and Sciences, American Association for the Advancement of Science, the American Psychological Association, the Association for Psychological Science, and the Institute of Electrical and Electronics Engineers (IEEE).  She is also a member of the Society of Experimental Psychologists (honorary). For her work on perception and action, she received an Alexander von Humboldt Research Award and the Kurt Koffka Medaille from Justus-Liebig-University of Giessen, Germany.  The Association for Psychological Science gave her its James McKeen Cattell Fellow Award, which honors a lifetime of outstanding contributions to applied psychological research. Her professional service includes governance roles in several societies and contributions to research review panels and editorial boards.



**Date | Time: Nov 28, 2023, 12:00 pm – 1:00 pm MST (United States)**

**WebEx:** [Link](https://ieeemeetings.webex.com/ieeemeetings/j.php?MTID=ma82f82c5ac65a10fba0d8ec8483dae4d)