



HUMANITY
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ROBOTICS
INITIATIVE



Kimberly Hambuchen NASA

“Exploring Space with Robots: Do we need people?”



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Abstract: Future NASA space exploration missions are often described as manned OR robotic. This presentation looks at how we can combine both humans and robots to advance NASA's reach in the solar system. The presentation also provides information about current prototype robots developed at NASA Johnson Space Center, and how these robots could assist manned-missions beyond near-Earth orbit.

Dr. Kimberly Hambuchen is the Deputy Manager for NASA's Human Robotic Systems project and the challenge administrator for NASA's Space Robotics Challenge. Since completing her Ph.D. in Electrical Engineering from Vanderbilt University in 2004, she has been a robotics engineer in the Software, Robotics and Simulation division at NASA Johnson Space Center. She is a former NASA Graduate Student Research Program fellow and previously held a postdoctoral position at NASA through the National Research Council. Dr. Hambuchen is an expert in developing novel methods for remote supervision of space robots over intermediate time delays. She has proven the validity of these methods through multiple NASA analog field tests with varying NASA robots, including the JSC Space Exploration Vehicles, Centaur platforms and Robonaut 2, the ATHLETE rovers from the Jet Propulsion Laboratory, and the Ames Research Center K-10s. She was the User Interface Lead for JSC's entry into the DARPA Robotics Challenge, using her expertise in remote supervision of robots to guide operator interface development for the bipedal humanoid robot, Valkyrie. She also currently manages development of telerobotic interfaces to manage robots in deep-space for the Autonomous Systems and Operations Project.

Host: Stefanie Tellex/HCRI