INCOSE

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KEYNOTE
SPEAKER

Nancy Cooke

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Human Systems Integration for Human-Machine Teaming

Biography. Dr. Nancy Cooke is a professor of Human Systems Engineering at Arizona State University and directs ASU's Center for Human, AI, and Robot Teaming. She received her PhD in Cognitive Psychology from New Mexico State University in 1987. Dr. Cooke is a past President of the Human Factors and Ergonomics and recently chaired a study panel for the National Academies on the Enhancing the Effectiveness of Team Science. Dr. Cooke was a member of the US Air Force Scientific Advisory board from 2008-2012. She currently serves on DARPA's Information and Science Technology Study Group and is a member of the National Academies committee on Risk Analysis for Nuclear War and Nuclear Terrorism. Dr. Cooke's research interests include the study of individual and team cognition and its application to the development of cognitive and knowledge engineering methodologies and human-AI-robot teaming in defense operations, urban search and rescue, and distributed space operations. Her work is funded primarily by DoD.

Abstract. A team is a relatively small system of 3-10 individuals. Human-machine teams are increasingly larger, heterogeneous, distributed, and multi-leveled. As human-machine system size and complexity increases, human systems integration becomes imperative and is needed throughout the life cycle of system development. In this talk I will describe a human systems integration approach to research that is particularly suited for early phases of system development. This approach involves, use of synthetic task environments, the Wizard of Oz paradigm, and robust measures. This approach to human systems integration is illustrated in three recent projects.