

Title: Convergence research addressing societal challenges: The central role of systems and control

Abstract:

A few years ago, the US National Science Foundation announced 10 Big Ideas for Future Investment. These research ideas, such as Harnessing the Data Revolution, or the Future of Work at the Human-Technology Frontier, all require expertise from multiple disciplines to come together to address specific problems that are important in our society. Engineering has a role to play in all of the Big Ideas, and specifically systems and control engineers have the opportunity to help develop solutions to these big problems. This talk will summarize the convergence research approach, describe how systems and control engineering has already made significant contributions using the convergence approach, and highlight future research opportunities. Examples will be used to illustrate the concepts.

Dawn Tilbury, National Science Foundation

Bio: Dr. Tilbury leads NSF's Directorate for Engineering in its mission to support engineering research and education critical to the nation's future and foster innovations to benefit society. The Engineering Directorate provides about 32 percent of the federal funding for fundamental research in engineering at academic institutions, and distributes about 1,600 research awards each year. The Engineering Directorate also helps to advance NSF's Ten Big Ideas, including the Future of Work at the Human-Technology Frontier, the Quantum Leap, and NSF INCLUDES.

A professor at the University of Michigan since 1995, in both mechanical and electrical engineering, Dr. Tilbury has a background in systems and control engineering. She is the inaugural chair of the Robotics Steering Committee and served as an associate dean for research in the College of Engineering. Dr. Tilbury retains her position with the University of Michigan, and shall return after her term with NSF expires.