

Keynote Speaking #5

## Multi-Port Architectures for Communications and Sensor Systems

Speaker: Prof. Thomas Pratt, University of Notre Dame



**Highlight:** Multi-port architectures enable improvements in the capabilities and performance of both communications and sensor systems relative to their single-port counterparts. In this talk, I will draw from experimental data from various multi-port testing campaigns, including mobile-to-mobile channel sounding tests in urban environments, and will present illustrations of multi-port system performance for different applications including diversity and/or capacity enhancement, interference avoidance, interference suppression, and sensing.

Dr. Thomas (Tom) Pratt (Ph.D. Georgia Tech, 1999; MSEE Georgia Tech 1989, BSEE Notre Dame 1985) was recently hired as a Research Associate Professor at the University of Notre Dame where his research focus is on physical and cross-layer issues associated with wireless communications. He has particular interest in multi-port communications and sensing architectures and their application to detection, interference avoidance and suppression, as well as diversity and capacity enhancement. His recent research has included *MIMO channel modeling* associated with linear arrays and dual-polarized architectures, *polarimetric sensing* with communications signals, *cosite interference suppression*, *distributed aperture processing* concepts for MIMO radar, and *cellular-based localization* algorithms. Prior to his appointment at Notre Dame, Dr. Pratt was a Principal Research Engineer at the Georgia Tech Research Institute where he had conducted systems research associated with RF and communications systems for over 23 years. While at GTRI, Dr. Pratt built-up and headed Georgia Tech's Software Radio Laboratory and also led the development of a mobile-to-mobile test system for MIMO experimental studies. He holds a patent on signal processing for GSM receivers and has two patents pending associated with multi-port adaptive transmission and interference suppression respectively. He has authored or coauthored over 100 reports and publications and is a member of the IEEE.