

Date: October 13, 2016

Time: 5:45 - 6:45 pm

Place: University of Colorado Discovery Learning Center,
Engineering Drive, Boulder, CO 80302



Speaker: Prof. Al Gasiewski

Title: Antenna Design Challenges for Remote Sensing Applications

Abstract: The design of antennas used in remote sensing is often driven by challenging frequency, cost, packaging, or functional constraints based on (e.g.,) required efficiencies or operating environments. Discussed in this talk are the design, fabrication, and testing of three novel antennas that provide required performance on three different remote sensing projects with the CU Center for Environmental Technology: the PolarCube passive microwave sounding CubeSat satellite, a small unmanned aerial system for soil moisture mapping, and the VALKYRIE cryobot synthetic aperture radar. These systems are examples of remote sensing systems that are anticipated to provide key new observational capabilities, but also presented significant challenges in antenna development. We discuss in this talk the flow down of constraints, design methodology, and performance metrics used in the development of the antennas for these systems, focusing on the processes that led to the final working products using a minimal number of design and test iterations.

Speaker Bio: Al Gasiewski is Professor of Electrical and Computer Engineering at the University of Colorado at Boulder and Director of the CU Center for Environmental Technology. He received the Ph.D. degree in electrical engineering and computer science from the Massachusetts Institute of Technology in 1989. Previously, he received the M.S. and B.S. degrees in electrical engineering and the B.S. degree in mathematics from Case Western Reserve University in 1983. From 1997 through 2005 he was with the U.S. National Oceanic and Atmospheric Administration's (NOAA) Environmental Technology Laboratory in Boulder, Colorado, USA, where he was Chief of ETL's Microwave Systems Development Division. From 1989 to 1997 he was a faculty member at the Georgia Institute of Technology. He has developed and taught courses on electromagnetics, remote sensing, instrumentation, and wave propagation theory. Prof. Gasiewski is a Fellow of the IEEE, Past President (2004-2005) of the IEEE Geoscience and Remote Sensing Society, and founding member of the IEEE Committee on Earth Observation (ICEO). He is a member of the American Meteorological Society, the American Geophysical Union, the International Union of Radio Scientists (URSI), Tau Beta Pi, and Sigma Xi. From 2009-2011 he served as Chair of USNC/URSI Commission F. He served on the U.S. National Research Council's Committee on Radio Frequencies (CORF) from 1989-1995. He was the General Co-chair of IGARSS 2006, in Denver, Colorado, and a recipient of the 2006 Outstanding Service Award from the GRSS.

Please Notify Michael Francis at michael.francis@nist.gov if you plan to attend.

