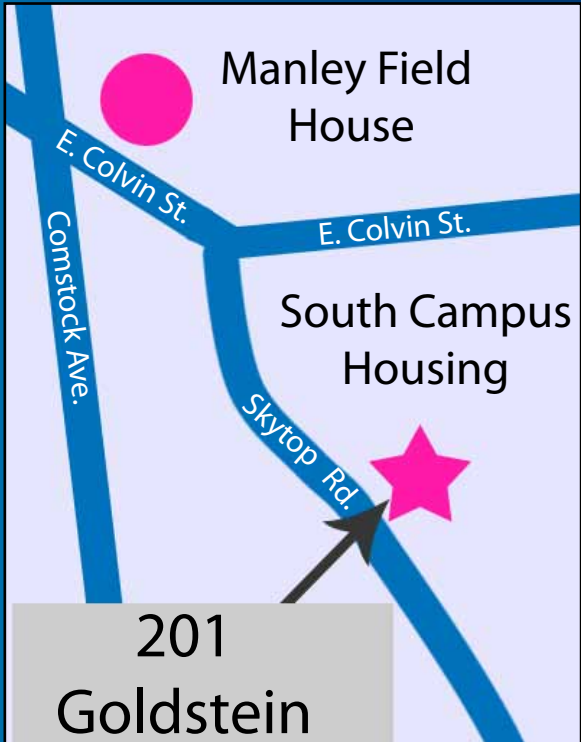


Thursday, December 11th

6 pm

Syracuse University
Goldstein Student Center
Room 201



Radiated Emissions/Immunity of the NASA/Orion Mars/Moon Capsule



Dr. John Norgard

IEEE Fellow

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For the future NASA Manned Space Exploration of the Moon and Mars, a blunt body capsule, composed of a crew exploration module and a service module, with a parachute decent for reentry back to Earth, will replace the retired Space Shuttle. A Capsule Parachute Assembly System (CPAS) is being developed for preliminary parachute drop tests at the Yuma Proving Ground (YPG) to provide measurements of position, velocity, acceleration, attitude, temperature, pressure, humidity, and parachute loads. The avionics system on CPAS also provides firing events to deploy and release staged/reefed parachutes using mortars and pressure cartridge assemblies. Intentional and unintentional radiation emitted and received by antennas and electronic components on/in the capsule are being tested for radiated emissions/immunity.

In this presentation, pictures of the test setups, capsule build-up and development, parachute drop tests, and test results for the components and assembled system are shown.



Dr. John Norgard is a Fellow of IEEE, on the Board of Directors of the EMC Society, on the Board of Directors for ACES, past member of the Board of Physics and Astronomy for NAS and NRC, Past Chairman for Commission A/Metrology of URSI, and an Associate Editor of the EMC Transactions in the area of antenna metrology. He has authored several hundred journal articles and conference papers and is the author of several chapters in four electromagnetic books.

Dr. Norgard is currently with NASA/JSC as the Chief Engineer for Electromagnetic Environmental Effects (E3). Previously, he was a Professor at the University of Colorado, the Chief Scientist at the Rome Research Site of the Air Force Research Lab, a Distinguished Visiting Professor at the US Air Force Academy and also at the Tel-Aviv University and was a member of the Technical Staff of the Bell Telephone Laboratories. Prof. Norgard was the Dean of the EAS College, Chair of the MAE Department, and Chair of the ECE Department at the University of Colorado. Before Colorado, he was a Professor in the ECE Department at Georgia Tech and was a Post-Doctoral Fellow at the Norwegian Defense Research Establishment in Oslo, Norway. He has also served as an Adjunct Professor at Syracuse University and at the University of Houston. He received the BSEE degree from Georgia Tech and MS and PhD degrees in Applied Physics from Caltech.



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