



**Karen L. Butler-Purry**, PhD, PE is Associate Provost for Graduate and Professional Studies and Professor in the Department of Electrical and Computer Engineering at Texas A&M University where she has served on the faculty since 1994. She received a B.S. in Electrical Engineering in 1985 from Southern University in Baton Rouge, Louisiana. She was awarded a M.S. degree in 1987 from the University of Texas at Austin and a Ph.D. in Electrical Engineering in 1994 from Howard University in Washington, D.C. Her research interests are in the areas of protection and control of distribution systems and isolated power systems such as all-electric power systems for ships, mobile grids, and microgrids; cybersecurity protection; and intelligent systems for equipment deterioration and fault diagnosis.

**THURSDAY, MARCH 13, 2014**

**11:00 A.M. TO 12:00 P.M. ITE 325B**

## UMBC EMINENT SCHOLAR PROGRAM PRESENTS: SMART DISTRIBUTION SYSTEMS

**Dr. Karen Butler-Purry, Texas A&M University**



Smart Grid refers to the computerizing of the grid via the addition of monitoring, analysis, control, and communication capabilities to improve its reliability, efficiency, and security. Smart meter devices, that include sensors to gather data and two-way digital communication between the smart meters in the field and the utility's grid operations center, are associated with the grid. The smart grid can take advantage of new technologies, such as plug-in hybrid electric vehicles, various forms of renewable and conventional distributed generation, lighting management systems, automation technology that lets the utility adjust and control each individual device or millions of devices from a central location, and many more. This presentation will discuss some of the current research projects being investigated by Butler-Purry's group on smart distributions systems, in grid or island operation. One project investigates the impact of cyber attacks on the operation of smart distribution systems. The second project developed two new approaches to enhance the protection of smart distribution systems. One approach uses smart meters during distribution planning to improve selectivity of protection, and the other approach uses smart meters during operation to improve the sensitivity of protection.

If you have a question regarding this seminar, please contact Dr. Slaughter, [gslaught@umbc.edu](mailto:gslaught@umbc.edu).

Sponsored by the Department of Computer Science and Electrical Engineering