

## **IEEE DISTINGUISHED LECTURE: COMMUNICATIONS IN THE SMART GRID**

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Abstract: The Smart Grid is an emerging technology that combines the traditional electric power grid with advanced communications and computing capabilities. A wide range of communications technologies will be needed in order to support applications such as the Advanced Metering Infrastructure (AMI), demand response, renewable energy resources and grid reliability systems. This presentation will describe several different communications technologies that will play important roles in the future Smart Grid, including both wireless and wireline approaches. The advantages and disadvantages of the various approaches will be described, and relevant standardization efforts will be mentioned. Several important properties and characteristics of the Smart Grid itself will also be presented in order to put the communications technologies into proper perspective.

Biography: Gerald Sobelman is a Professor in the Department of Electrical and Computer Engineering at the University of Minnesota, and he has served as the Director of Graduate Studies for the Graduate Program in Computer Engineering at the University of Minnesota. He received a B.S. degree in physics from the University of California, Los Angeles, and M.S. and Ph.D. degrees in physics from Harvard University. He has been a postdoctoral researcher at The Rockefeller University, and he has held senior engineering positions at Sperry Corporation and Control Data Corporation.

Prof. Sobelman was a Distinguished Lecturer of the IEEE Circuits and Systems Society during 2008–2009, and he is currently serving again as a Distinguished Lecturer for 2013-2014. He has been a member of the technical program committees for several IEEE conferences, including ISCAS, SOCC and ICCSC. He was Chair of the Technical Committee on Circuits and Systems for Communications of the IEEE Circuits and Systems Society, and he has also served as an Associate Editor for IEEE Transactions on Circuits and Systems I and for IEEE Signal Processing Letters. In addition, he has chaired many sessions at international conferences in the areas of communications and VLSI design.

Prof. Sobelman has developed and presented short courses on digital VLSI design at several industrial sites. He has also given invited lectures at many universities, and he has been a consultant to a number of companies. His current research interests are in the areas of circuit and system design for applications in communications and signal processing. He has authored or co-authored more than 120 technical papers and 1 book, and he holds 12 U.S. patents.

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