

## **Making smart decisions: Exploring the Smart Grid at Michigan State University** [View Abstract](#)

- [Dr. Ron Choura](#), Telecommunications, Information Studies & Media, MSU
- [Dr. Joydeep Mitra](#), Electrical and Computer Engineering, MSU
- [Dr. Satish Joshi](#), Agriculture, Food and Resource Economics, MSU
- Lynda Boomer, Energy & Environmental Engineer, MSU Physical Plant

### **SESSION ABSTRACT:**

The benefits of a micro-nano distributed smart grid are reduced emissions, lower costs, increased reliability, greater security, and flexibility to accommodate new energy technologies such as renewable, intermittent and distributed sources. The goal of this research group is to research micro-nano distributed smart grids and test how to collect and provide the optimal amount of information necessary for customers and generators to change their behavior in a way that reduces system demands and costs, increases energy efficiency, optimally allocates and matches demand and resources to meet that demand, and increases the reliability of the grid on a distributed micro-nano level.

This session will cover, 1. An overview of current and future smart grid technologies; 2. Economic and policy considerations of smart grids; and 3. Organizational challenges and the role of communities. The session will conclude with an interactive round table discussion on specific areas MSU can pursue in smart grid research.

### **PRESENTER BIOSKETCHES**

#### **Dr. Ron Choura, Telecommunications, Information Studies & Media, MSU**

Ron Choura has been active in the government and telecommunications industry for more than 39 years. He currently holds the position of State Executive with the Michigan Department of Energy, Labor and Economic Growth, Public Service Commission (PSC), and Faculty at MSU. His past experience included the management of the Service Quality Section (PSC), Deputy Director of the Policy Division, managed the MSU communications technology lab. He has developed a number of ways to bring telecommunications services to various areas of the country through administrative and technical approaches.

#### **Dr. Joydeep Mitra, Electrical and Computer Engineering, MSU**

Joydeep Mitra joined the Department of Electrical and Computer Engineering as an Associate Professor. He acquired his PhD in electrical engineering from Texas A&M University, College Station, and his bachelor's degree, also in electrical engineering, from Indian Institute of Technology, Kharagpur. His research interests include power system reliability and security, and distributed and renewable energy resource planning. He has received research support from electric utilities, Sandia National Laboratories, the Department of Energy, and the National Science Foundation, including an NSF CAREER Award. He is a senior member of the IEEE and contributes to the Power and Energy Society, the Industrial Applications Society, and the Standards Association.

#### **Dr. Satish Joshi, Agriculture, Food and Resource Economics, MSU**

Satish Joshi joined the faculty in 2000 to undertake research and teaching in the area of environmental and natural resource management and policy. His current research focuses on environmental life cycle analysis, corporate environmental management, alternative transportation fuels, biobased materials, and environmental accounting. His teaching interests include Corporate Environmental Management, Environmental Economics, Ecological Economics and Public Policy Analysis.

#### **Lynda Boomer, Energy & Environmental Engineer, MSU Physical Plant**

Lynda Boomer is currently the Energy and Environmental Engineer with the MSU Physical Plant Division, where she has been employed for 22 years. The greater part of her career has been spent in the Engineering and Architectural Services department as a designer and project manager for renovation projects and new construction. Currently, Boomer's numerous duties are centered on enhancing Michigan State University's commitment to environmental stewardship.

Boomer graduated from Michigan State University with a degree in electrical engineering and is a professional engineer in the State of Michigan. She is also an accredited LEED (Leadership in Energy

and Environmental Design) professional. She has also developed the baseline CO2 emissions inventory for campus for the Chicago Climate Exchange, which is a market-based greenhouse gas reduction trading platform.