



## SMART GRID WORKSHOP

### Smart Grids Big Data

Memorial Student Center

Texas A&M University

April 28, 2016

### Program

- 7:30 **Registration, Room 2400**
- 8:00 **Opening Remarks:** [Mladen Kezunovic](#), Director, Smart Grid Center, TEES
- 8:10 **Welcome:** [Glen A. Laine](#), Vice President for Research, Texas A&M University
- 8:20 **Introduction:** [Mladen Kezunovic](#), Director, Smart Grid Center, TEES “Smart Grids Big Data,” [Slides>](#)
- 8:45 **Invited Talk:** [Alireza Ghassemian](#), Office of Electricity Delivery and Energy Reliability, Department of Energy, “Big Data Analytics: Research Needs,” [Slides>](#)
- 9:10 **Panel 1: “Current Uses of and Technologies for Big Data in Smart Grids”**  
*Chair:* [John McDonald](#), GE Grid Solutions  
*Co-Chair:* [Miroslav Begovic](#), Texas A&M University

*Panelists:*

- [Alberto Del Rosso](#), EPRI, “Big Data in Utility Industry” [Slides>](#)  
[Brian Baldwin](#), Esri, “Big Data and GIS: Advantages and Challenges”  
[Deepjyoti Deka](#), Los Alamos National Lab, “Big Data Research at LANL” [Slides>](#)  
[Rodolfo Bialecki Leandro](#), FUSC, Brazil, “MedFase Project: Case Study of Synchrophasor Big Data” [Slides>](#)

10:10 **Break (Room 2400) and Posters (Room 2401)**

10:30 **Focus Group Sessions:**

“Big Data Types and Sources in Smart Grids”      “Big Data Analytics and Technology for Smart Grids”

**Rm 2400**

*Chair:* [Brian Baldwin](#), Esri  
*Co-Chair:* [Yu Ding](#), Texas A&M University  
[Slides>](#)

**Rm 2500**

*Chair:* [Mark Rice](#), PNNL  
*Co-Chair:* [Nick Duffield](#), Texas A&M University

11:30 **Plenary Session:** Report-out by Focus Groups (Room 2400)

12:00 **Lunch (Room 2300 A) and Posters (Room 2401)**

**Welcome:** [Dimitris Lagoudas](#), Deputy Director, Texas A&M Engineering Experiment Station; Senior Associate Dean for Research, Dwight Look College of Engineering; Associate Vice Chancellor of Engineering Texas A&M University

**Featured Speaker:** [Renata Afi Rawlings-Goss](#), the Co-Executive Director of the South BD Hub, Georgia Institute of Technology “The NSF South Big Data Hub: Current Status and Future Plans,” [Slides>](#)

13:30 **Focus Group Sessions**

“Solving the T&D Challenges with Big Data”

“Solving the Customer Challenges with Big Data”

**Rm 2400**

Chair: [Jim O’Rourke](#), OSIssoft

Co-Chair: [Anita Rapp](#), Texas A&M University

**Rm 2500**

Chair: [Haitham Abu-Rub](#), Texas A&M University-Qatar

Co-Chair: [Le Xie](#), Texas A&M University

14:30 **Break (Room 2400) and Posters (Room 2401)**

15:00 **Plenary Session:** Report-out by Focus Groups (Room 2400)

15:30 **Panel 2:** Future Uses of Big Data in Smart Grids

Chair: [Tom Overbye](#), University of Illinois at Urbana-Champaign

Co-Chair: [Dilma Da Silva](#), Texas A&M University

*Panelists*

[P.R. Kumar](#), Texas A&M University, “Big Data Science: Opportunities and Challenges,” [Slides>](#)

[Jim O’Rourke](#), OSIssoft, “Big Data Historical Repositories,” [Slides>](#)

[Bri-Mathias Hodge](#), NREL, “Big Data Research in Renewable Power Sources,” [Slides>](#)

[Haitham Abu-Rub](#), Texas A&M University-Qatar, “Big Data in Microgrids,” [Slides>](#)

16:30 **Closing Remarks:** [Mladen Kezunovic](#), Director, Smart Grid Center, TEES

17:00 **Post-Workshop Reception and Posters (Room 2401)**

18:30 **Adjourn.**

## Posters (Room 2401)

### Big Data Types and Sources in Smart Grids

	<b>Authors</b>	<b>Title</b>
<b>1.</b>	Kezunovic, Mladen, Po-Chen Chen	The Use of Big data for Outage Management in Distribution Systems
<b>2.</b>	Chen, Po-Chen, Tatjana Dokic, Mladen Kezunovic	The Use of Big Data for Outage Management in Distribution Systems
<b>3.</b>	Kezunovic, Mladen, Le Xie, Santiago Grijalva	Systematic Integration of Large Data Sets for Improved Decision-Making

## **Big Data Analytics and Technology for Smart Grids**

<b>4.</b>	Chen, P.-C., T. Dokic, D. Goldberg, M. Kezunovic	Using Geographical Information System for Distribution Outage Management
<b>5.</b>	Geng, Xinbo, Le Xie	A Data-driven Approach to Identifying System Pattern Regions in Market Operations
<b>6.</b>	Qian, Cheng, Tomo Popovic, Mladen Kezunovic	Implementation of PMU Calibration and Certification Laboratory
<b>7.</b>	Zheng, Zhiyuan, Allen Webb, Narasimha Reddy	Application of Host-based Firewall to Harden the Security of SCADA Systems

## **Solving the T&D Challenges with Big Data**

<b>8.</b>	Becejac, Tamara, Mladen Kezunovic, Tomo Popovic	Field End-to-end calibration and testing for synchrophasor systems
<b>9.</b>	Chen, Po-Chen, Tatjana Dokic, Mladen Kezunovic	Risk Analysis of Weather Impact on Outage Management in Distribution System
<b>10.</b>	Dehghanian, Payman, Mladen Kezunovic	Flexible Implementation of Power System Topology Control in Smart Electricity Grids
<b>11.</b>	Dokic, Tatjana, Po-Chen Chen, Mladen Kezunovic	Placement of Transmission Line Surge Arresters Based on Risk Analysis
<b>12.</b>	Dokic, Tatjana, Mladen Kezunovic	Evaluating Impact of Weather to Insulation Coordination using Big Data
<b>13.</b>	Dokic, Tatjana, Nicholas Stokes, Po-Chen Chen, Daniel Goldberg, Mladen Kezunovic	Geospatial Analysis for Electric Transmission Network Outage Management
<b>14.</b>	Tasdighi, Mohammad, Mladen Kezunovic	Distance Relay Settings Adequacy Assessment for an Evolving Network Topology
<b>15.</b>	Zhang, Bei, Mladen Kezunovic	Impact of Available Electric Vehicle Battery Power Capacity on Power System Reliability

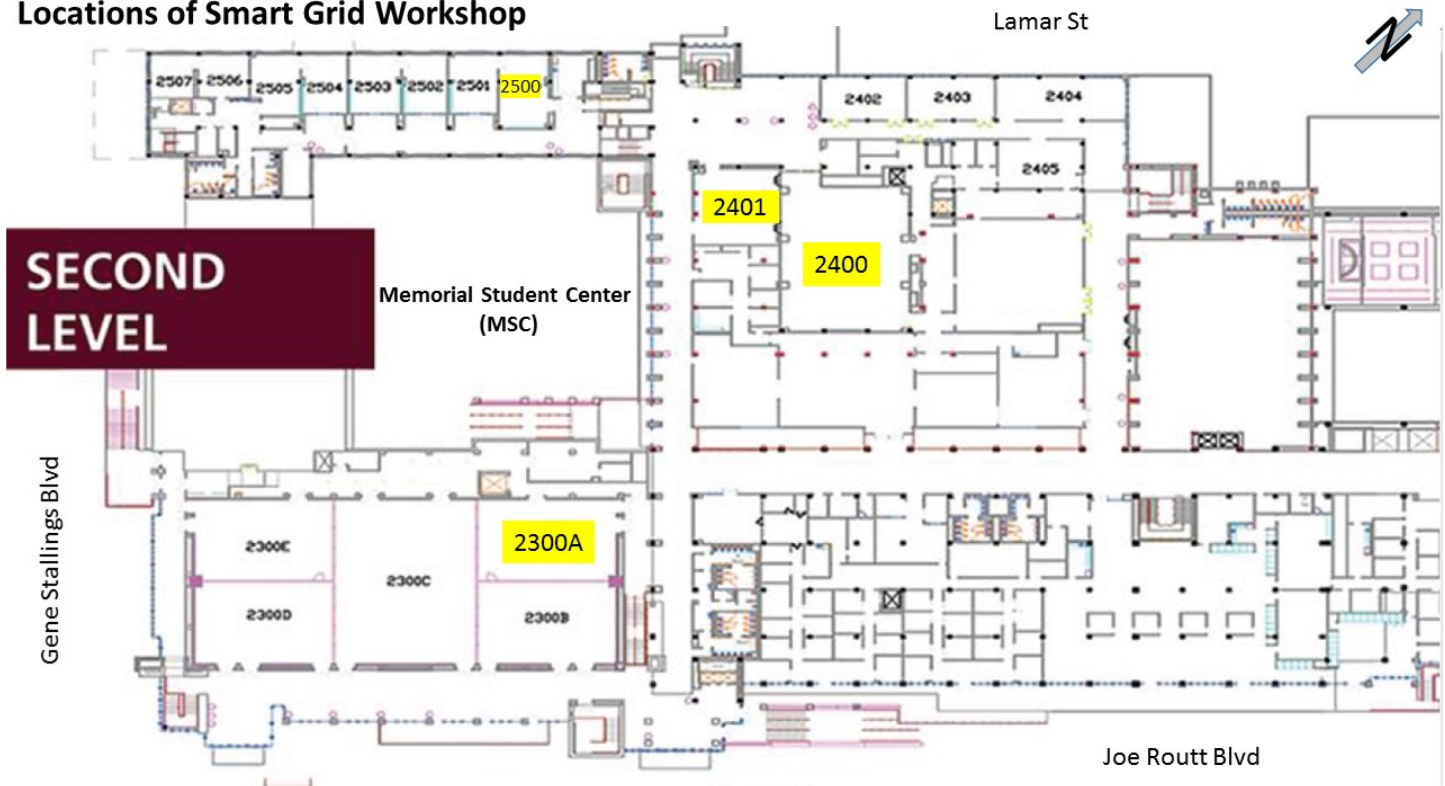
## Solving the Customer Challenges with Big Data

16.	Yan, Qin, Ilaval Manickam, Mladen Kezunovic, Le Xie	A Multi-tiered real-time pricing algorithm for electric vehicle charging stations
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## Other Issues in Smart Grids

17.	Chou, Hung-Ming	A new voltage stability analysis method for three-phase unbalanced distribution systems: CPF scan
18.	Ponce V., Victor, Oswaldo Ochoa, and Jorge M. Seminario	Analysis of the initial charge of a Li-ion nano-battery using molecular dynamics simulations

## Locations of Smart Grid Workshop



## Thanks to the Workshop Sponsors:

**TEXAS A&M**  
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at Texas A&M University



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