



ENERGY & POWER RESEARCH DAY

Texas A&M Engineering Experiment Station Smart Grid Center (SGC)

**Department of Electrical and Computer Engineering
Energy and Power Group (EPG)**

Room 1107-1109
Center for Infrastructure Renewal (CIR), Texas A&M University System
1041 RELIS Parkway, Bryan TX 77807

Friday, April 28, 2023

Agenda

- 8:30 - 9:00** Arrival and Check-in; Light Continental Breakfast Provided
- 9:00 - 9:30** Welcome, SGC and EPG Overview (Tom Overbye) [Slides >](#)
- 9:30 - 9:55** Blockchain and Energy: Understanding the Impact of Cryptomining on Power Grid (Le Xie)
- 9:55 - 10:20** Physics-Aware and AI-Enabled Cyber-Physical Intrusion Response for the Power Grid (Kate Davis) [Slides >](#)
- 10:20 - 10:35** Break

Research Session 1 (Kate Davis, Session Chair) (10:35 to 11:50, Room 1108-1109)

- 10:35 - 11:00** Innovative Black Start Procedures (Adam Birchfield)
- 11:00 - 11:25** An Approach for the Direct Inclusion of Weather Information in the Power Flow (Farnaz Safdarian) [Slides >](#)
- 11:25 - 11:50** Energy Consumption and Power Quality in Bitcoin Mining Facilities in Texas (Sama Abdulsattar A. Almubarak, Prasad Enjeti) [Slides >](#)
- 11:50 - 13:15** **Lunch; Hands-On Activities and Demos**

**Lunch (Pre-function Area and Room 1108-1109)
Control Room Hands-On Activities and Demos (Rooms 3339 and 3350)**

Research Session 2 (Jonathan Snodgrass, Session Chair) (13:15 to 15:00, Room 1108-1109)

- 13:15 - 13:35** Harnessing the n-Grid Flexibility for Transmission/Distribution Grid Support (Mohammad Khoshjahan) [Slides >](#)
- 13:35 - 14:00** Power Electronics Dominated Grid (Iresha Poonahela Vidanelage) [Slides >](#)
- 14:00 - 14:25** Quantification of Area Sparsity in Large-Scale Electric Grids (Sanjana Kunkolienkar) [Slides >](#)
- 14:25 - 14:50** New Facilities and Capabilities to Support Grid-Edge Modernization R&D (Robert Balog) [Slides >](#)
- 14:50 - 15:00** Break



Research Session 3: Power Systems Cybersecurity Roundtable: Challenges & Opportunities in Grid Cyber-Physical Intrusion Response (Kate Davis, Session Chair) (13:15 to 15:00, Room 1107)

- 13:15 - 13:20** Scalable Cyber-Physical Optimal Response: Industry/Academic Path (Kate Davis)
- 13:20 - 13:30** Assessing the Cyber Network to Aid Response (NPView- Robin Berthier) [Slides >](#)
- 13:30 - 14:00** Assessing Human Interactions to Aid Response (TDi- Pam Johnson) [Slides >](#)
- 14:00 - 14:10** Power System Use of AI in Response with Real World Data (EPE- Hala Ballouz)
- 14:10 - 14:20** Intrusion Response in the Real World (TEEX - Chris Jett) [Slides >](#)
- 14:20 - 14:50** Panel Discussion (All, Chris Jett, Kate Davis, Saman Zonouz, Ana Goulart, Rakesh Bobba)
- 14:50 - 15:00** Closing, Next Steps (Kate Davis)

Research Session 4 (Farnaz Safdarian, Session Chair) (15:00 to 16:00, Room 1108-1109)

- 15:00 - 15:25** Active Transmission: the "Transmotor" for Vehicles and Wind Turbines (Ramin Tafazzoli) [Slides >](#)
- 15:25 - 15:50** New Developments in Geomagnetic Disturbance Analysis (Jonathan Snodgrass) [Slides >](#)
- 15:50 - 16:00** Closing (Thomas Overbye)
- 16:00** **Adjourn**

Logistics

The event will be held at the Texas A&M Center for Infrastructure Renewal (CIR). CIR is on the Texas A&M RELLIS campus. For parking at CIR, TAMU parking permits apply, otherwise for free parking, when entering to the CIR building you must to provide your car's license plate number at the front desk.

For any issues associated with the event contact either Tom Overbye (overbye@tamu.edu, cell: 217-649-9488) or Andrea Kishne (akishne@tamu.edu, office: 979-317-1285) or Kelly Nickinson (kelly.ford@tamu.edu); the CIR conference wing contact is Samantha Lipscomb (cirevents@tamu.edu).



Smart Grid Center

Texas A&M Engineering Experiment Station




TEXAS A&M UNIVERSITY

Department of Electrical & Computer Engineering

Directions and Parking

- CIR building is marked with #20 on the RELLIS campus map.
- Parking is available nearby the CIR building. **For Guests without Texas A&M University parking permits**, parking is available with no fee charged, just, please follow instructions shown below:
 - CIR staff will register you upon arrival.
 - You must provide name, license plate number and reason for visit.
 - Permits are tag-less and are monitored using license plate recognition.

Maps are shown below.



RELLIS

THE TEXAS A&M UNIVERSITY SYSTEM

NORTHEAST CAMPUS MAP

RELLIS CAMPUS INFORMATION | RELLIS.tamus.edu



Corporate & Partnerships	979.458.2404
Education	979.458.6037
Physical Address	3100 Texas 47 Bryan, TX 77807
Email	RELLIS@tamus.edu


BUILDING NUMBER & NAME

- 1 RELLIS Academic Complex Phase 1 (Opening Fall 2019)
- 2 Blinn College Walter C. Schwartz Building
- 3 Blinn College Faculty Annex
- 4 TEEES Law Enforcement Office Building
- 5 TEEES Law Enforcement Gym
- 6 Architecture Fabrication and Design Lab
- 7 Architecture Fabrication and Design Lab
- 8 Conservation Research Lab
- 9 RELLIS Campus Administration and Operations Building (Opening Spring 2019)
- 10 RELLIS Central Utility Plant
- 11 TTI Environmental & Emissions Research Lab
- 12 TTI Research Storage Building
- 13 RELLIS EHS Hazardous Waste Facility
- 14 TTI Machining Facility
- 15 TTI Proving Ground Research Support
- 16 TTI Proving Ground Research Hangar
- 17 TTI Office Building
- 18 TTI Research Pendulum Test Facility
- 19 TEEES Energy Systems Lab
- 20 Center for Infrastructure Renewal (CIR)
- 21 TTI Headquarters Building
- 22 Joint Library Facility with University of Texas

PARKING LOT PERMITS

Visitors needing to park at RELLIS should use the Parkmobile app at transport.tamu.edu/Parking or pay stations to pay by the hour. Or go online to purchase an annual permit beginning August 1.

-  Parking lot 1000 for Academic Alliance
-  Parking lot for CIR



Legend:

CIR Guest:

- 1100006; 1100007; 1100008

TEES Director/Deputy Director:

- 1100009; 1100010

30 Minute Parking:

- 1100013; 1100014

TTI Director:

- 1100015


1100006

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