### MONDAY, OCTOBER 18 (Pre-Symposium Workshops)

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<td>10:45 – 11:00 ET</td>
<td>Welcome – Ethan Huffman</td>
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| 11:00 – 12:30 ET | **TRACK 1:** Societal Benefits of Resilience/What does Resilience Mean to you  
Chair: Bobby Jeffers, SNL  
Presenters: Amanda Wachtel, SNL  
Susan Spierre-Clark, U Buffalo  
Pete Larsen, LBNL  
**TRACK 2:** Community & Infrastructure Modeling Tools: Interdependent Networked Community Resilience Modeling Environment (IN-CORE)  
Chair: Craig Rieger, INL; Kevin Schultz, JHUAPL; Stephanie Pilkington, UNCC, Tim McJunkin JHUAPL; Char Sample, DoD  
Presenter: Jong Sung Lee, U. Ill. UC  
**TRACK 3:** Workforce Development – National Need and Future Outlook - Federal Panel  
Chair: Eleanor Taylor, INL  
**TRACK 4:** Power Grid Resilience: Needs and challenges  
Chairs: Mohammed Ben-Idris, UNR; Anurag Srivastava, WVU | **TRACK 1:** The Heat is On – An Interactive Cyber Exercise  
Chairs/Presenters: Kimberly Denbow, AGA  
Jon Monken, Converge Strategies  
**TRACK 2:** Community & Infrastructure Modeling Tools: All Hazards Analysis  
Chair: Craig Rieger, INL; Kevin Schultz, JHUAPL; Stephanie Pilkington, UNCC, Tim McJunkin JHUAPL; Char Sample, DoD  
Presenter: Ryan Hruska, INL  
**TRACK 3:** Workforce Development  
**TRACK 4:** Power Grid Resilience: Definitions, metrics and tools  
Chairs: Mohammed Ben-Idris, UNR; Anurag Srivastava, WVU |                                                             |                                                             |                                                             |
| 12:30-1:30 ET   | Lunch Break                                                 |                                                                           |                                                             |                                                             |
| 1:30 – 3:00 ET   | **TRACK 1:** DOE GMLC Resilient Distribution Systems (RDS) Projects (Closeout and what’s next)  
Chairs: Abraham Ellis, Sandia; Emma Stewart, NRECA  
**TRACK 2:** Community & Infrastructure Resilience Modeling and Simulation Needs/Challenges  
Moderator: Stephanie Pilkington, UNCC  
Panelists: Ryan Hruska, INL  
Jamie Kruse, East Carolina U  
Thomas Overby, Texas A&M  
John Van de Lindt, CSU  
**TRACK 3:** Workforce Development  
**TRACK 4:** Gaining Consensus on Power Grid Resilience Metrics (brainstorming)  
Chairs: Mohammed Ben-Idris, UNR; Anurag Srivastava, WVU |                                                             |                                                             |                                                             |
| 3:00 – 4:30 ET   |                                                             |                                                                           |                                                             |                                                             |
| 4:30-6:00 ET     | **TRACK 1:** Domain Components of the Impending Cyber-Physical Energy System Transformation  
Chair: Paul Roege, Typhoon-HIL  
**TRACK 2:** IN-CORE and AHA Interactive Session  
Chair: Craig Rieger, INL; Kevin Schultz, JHUAPL; Stephanie Pilkington, UNCC, Tim McJunkin JHUAPL; Char Sample, DoD  
Presenters: Ryan Hruska, INL  
Jong Su Lee, U. Ill. UC  
**TRACK 3:** Workforce Development  
**TRACK 4:** Tools for Enabling Power Grid Resilience (Brainstorming)  
Chairs: Mohammed Ben-Idris, UNR; Anurag Srivastava, WVU |                                                             |                                                             |                                                             |

*PLEASE NOTE: Agenda is in U.S. Eastern Time Zone*
### TUESDAY, OCTOBER 19 (FED Day)

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<td>10:45-11:00 ET</td>
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| 11:00 – 12:30 ET | Plenary Speaker 1 – Dr. Craig Rieger, INL  
Plenary Speaker 2 – TBA  
Plenary Speaker 3 – TBA |
| 12:30-12:45 ET| Break                                                                   |
| 12:45 – 2:15 ET | SESSION 1                                                               |
|               | **TRACK 1: WETO/SETO/WPTO Invited**  
Chair: Tim McMunick, INL                                                |
| 2:15 – 2:30 ET| Lunch Break                                                             |
| 2:45 – 3:45 ET| SESSION 2                                                               |
|               | **TRACK 1: Energy Transition Initiative**  
**EERE/OE (ETIPP)**  
Chairs: Stephen Walls, DOE OE; Abraham Ellis, Sandia               |
|               | **TRACK 2: DOD Achieving Resilience for Control Systems Across Government-owned and Commercially-owned Assets**  
Chair: Aleksandra Scalo, US Navy Panelists  
DHS CISO Kenneth Bible (SES) (DHS mission)  
NSA Michael Dransfield (SES) (control systems)  
ASN EIE Sandra Kline (SES) (Navy installations)  
OSD Policy Daryl Haegley (DOD Mission/Policy)  
NAVFAC DCIO/CTWH Michael Kilcoyne (Navy Cybersecurity for control systems) |
|               | **TRACK 3: Cyber City: A Platform for Resilience**  
Chair/Presenter: Candice Mitchell, US Army Corps of Engineers          |
| 3:45 – 4:00 ET| Break                                                                   |
| 4:00 – 5:00 ET| SESSION 3                                                               |
|               | **TRACK 1: Prognostic sensing and modeling for resilient management of extreme events**  
Chair: Kris Villez, ORNL  
Panelists:  
Bear Prairie, Idaho Falls Power  
Mohammed Ben-Idris, Univ. of NV |
|               | **TRACK 2: DoD – All Hazards Analysis (AHA) presented with the Army Cyber Institute (ACI)**  
Chair: Tim Klett, INL                                                      |
|               | **TRACK 3: The National Cybersecurity Workforce Development Program: An Innovative and Scalable Framework to Expand the Critical Infrastructure Security Human Capital**  
Chair: Eman El-Sheikh, Univ. of West FL Panelists  
Diane M. Janosek, NSA  
Eman El-Sheikh, Univ. of West FL  
Dipankar Dasgupta, Univ. of Memphis  
Art Conklin, Univ. of Houston     |
| 5:00 – 5:15 ET| Break                                                                   |
| 5:15 – 6:15 ET| Research Poster Presentations  
*Note: The authors will formally present their posters at the times listed, however they will be available to chat for the entire hour.*  
Posters:  
- 5:15 - Extensive resilience analysis of function models of complex systems, Yann Guillouet, German Aerospace  
- 5:20 - Cyber-Physical Security Assessment and Resilience of a Microgrid Testbed, Theron Beam, BSU  
- 5:25 - COVID Response: A Blended Approach to Studying Sanitizer Station Deployment at Clemson University, Tyler O’Brien, Clemson University |

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WEDNESDAY, OCTOBER 20 (Research Day)

10:45-11:00 ET  Welcome – Ethan Huffman
Best Papers Announcements

11:00 – 12:30 ET  Plenary Speaker: Energy Transition
Kate Gordon, Senior Advisor to Secretary of Energy

Plenary Panel: How do we maintain or even improve resilience in the drive towards Net-zero carbon
Moderator: Amy Myers Jaffe, Managing Director of the Climate Policy Lab at The Fletcher School at Tufts University

Panelists: Department of Energy Deputy Assistant Secretaries: Michael Pesin (OE), Alice Caponiti (NE),
Alejandro Moreno (EERE)

12:30-12:45 ET  Break

12:45 – 2:15 ET  SESSION 1

TRACK 1: Autonomous Intelligence for Cyber Defense Agents
Chair: Nate Evans

TRACK 2: Future Challenges in Human-Technology Integration: A Sponsor’s Perspective
Chair: Katya Le Blanc, INL; Corey Fallon, PNNL

TRACK 3: Convergence of Resilience and Equity
Chair: Bobby Jeffers, Sandia
Panelists
Forest Kaser, CPUC
Shay Bahramirad, Quanta Technology
Adaora Ifebigh, NRECA
Kyle Spencer, City of Norfolk

2:15-2:45 ET  Lunch Break

2:45-3:45 ET  SESSION 2

TRACK 1: Cognitive Systems Papers
Chairs: Nathan Lau, VT; Katya Le Blanc, INL; Corey Fallon, PNNL
  A Methodology for Assessing Risk to Inform Technology Integration, Corey Fallon, PNNL
  Exploration of Time-Based Resilience Measurements for Next Generation Combat Vehicle Teams, Hudson Graham, ASU

TRACK 2: Cyber System Papers
Chairs: Nate Evans, ANL; David Manz, PNNL; Char Sample, DoD
  Continuous Infrastructure Assessment for Key Business Functions in Changing Environments, Gabriel Weaver, UIUC
  A Cyber-Resilience Risk Management Architecture for Distributed Wind, Megan Culler, INL
  Digital data provenance for the power grid based on a Keyless Infrastructure Security Solution, Sri Nikhil Gupta Gourisetty, PNNL

TRACK 3: Community/Infrastructure Papers
Chairs: Raymond Byre, Abraham Ellis, SNL; Stephanie Pilkington, UNCC
  Refueling Delay Models in Heterogenous Road Networks for Wireless Communications Base Station Gensets Operating in Extreme Conditions, Vaidyanathan Krishnamurthy, UT
  Statistical Evaluation of Flooding Impact on Power System Restoration Following a Hurricane, Grant Cruse, UPitt

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| 3:45-4:00 ET | Break |
| 4:00-5:00 ET | SESSION 3 |
| **TRACK 1:** Control Systems Papers  
Chairs: Kris Villex, ORNL; Quanyan Zhu, NYU; Kevin Schultz, JHUAPL  
- **Novel Data Driven Noise Emulation Framework using Deep Neural Network for Generating Synthetic PMU Measurements**, Sri Nikhil Gupta, Gourisetti, PNNL  
- Automatic Drift Correction through Nonlinear Sensing, Kris Villez, ORNL  
- Adaptive, Cyber-Physical Special Protection Schemes to Defend the Electric Grid Against Predictable and Unpredictable Disturbances, Shamima Hossain-McKenzie, SNL  
- Hierarchical Operation of Flexible Building Microgrids for Distributed Critical Loads Resiliency, Manohar Chamana, TT |
| **TRACK 2:** Cyber Systems Papers  
Chairs: Nate Evans, ANL; David Manz, PNNL; Char Sample, DoD  
- Chaos Engineering for Enhanced Resilience of Cyber-Physical Systems, Charalambos Konstantinou, KAUST  
- Data-Driven Suitability Analysis to Enable Machine Learning Explainability and Security, Shaya Wolf, INL  
- On the Limits of EM Based Detection of Control Logic Injection Attacks In Noisy Environments, Konstantinos Kolias, UI  
- Infrastructure eXpression for Codified Cyber Attack Surfaces and Automated Applicability, Rita Foster, INL |
| **TRACK 3:** Communications Crossover Papers  
Chairs: Eyuphan Bulut, VCU; Kemal Akkaya, FIU; Brad Nelson, INL  
- Modular Network Stacks in the Real-Time Executive for Multiprocessor Systems, Vijay Banerjee, UC, Colorado Springs  
- Analyzing Implicit Interactions to Identify Weak Points in Cyber-Physical System Designs, Jason Jaskolka, CU  
- Cyber Senses: Modeling Network Situational Awareness after Biology, Benjamin Blakely, ANL |
| 5:00 – 5:15 ET | Break |
| 5:15-6:15 ET | SESSION 4 |
| **TRACK 1:** Supply Chain Security for Industrial Control Systems  
Chair: Quanyan Zhu, NYU |
| **TRACK 2:** Resilient Communications  
Chair: Brad Nelson, INL |
| **TRACK 3:** “Homeland” Critical Infrastructure Resiliency Tabletop Exercise  
Chair: Kendall Bean, Univ of Idaho  
Presenters  
Chandler Bean, BYU-I  
Michael Haney, U of Idaho  
David Oliver, INL |
THURSDAY, OCTOBER 21 (Hot Topic Day)

10:45-11:00 ET  Welcome – Ethan Huffman

11:00 – 12:30 ET  Plenary Panel:  Policies and Priorities to Advance Cyber Resilience in Critical Facilities and Infrastructures  
Moderator:  Zach Tudor, INL  
Panelists  
Sudha Vyas, DOD CIO Chief Architect  
Puesh Kumar, DOE CESER  
Dr. David Mussington, Executive AD Infrastructure Security Division (ISD) within CISA

12:30 - 12:45 ET  Break

12:45 – 2:15 ET  SESSION 1  

TRACK 1:  Is Mission Decomposition the Key to Unlocking Energy Resilience?  
Chair/Presenter:  Jonathon Monken, Converge Strategies

TRACK 2: Artificial Intelligence and Machine Learning  
Chair:  Char Sample, MTSI

TRACK 3: Applying Advanced Grid Technologies for Improving Resilience of Critical Loads  
Chair:  Charlie Vartanian, PNNL  
Presenters  
Clay Koplin, Cordova Electric Cooperative  
Dan Borneo and Waylon Clark, Sandia National Laboratory  
Lauren Khair, National Rural Electric Cooperative Association  
Frank Tuffner and Jeremy Twitchell, Pacific Northwest National Laboratory

2:15 – 2:45 ET  Lunch Break

2:45 - 3:45 ET  SESSION 2  

TRACK 1: Climate Informed Infrastructure Resilience Engineering  
Chairs:  Andy Bochman, Gavin Hawkley, Ryan Cobey, INL

TRACK 2: Challenges in Human-Machine Teaming with AI  
Chairs:  Katya LeBlanc, INL; Nate Evans, ANL; Stephanie Pilkington, UNCC

TRACK 3: Commercial Routing Assistance (CRA) capability with the CISA Integrated Operations Division (IOD) and All Hazards Consortium  
Chair:  Tim Klett, INL

3:45 – 4:00 ET  Break

4:00 – 5:00 ET  SESSION 3  

TRACK 1: Water and the Built Environment  
Chair:  Irene Susini, Frontiers Media

TRACK 2: Structured Threat Intelligence Graph Case Studies and Use  
Chair:  Nate Evans, AN

TRACK 3: Electric Vehicle and Grid Integration: Tools for a Resilient Electrified Transportation Future  
Chair:  Tim Pennington, INL

5:00 – 5:15 ET  Break

5:15 – 6:15 ET  SESSION 4  

TRACK 1: American Water Works Association and West Yost: How Consequence-driven Cyber-informed Engineering (CCE) helped us to be more Resilient  
Chair:  Tim Klett, INL

TRACK 2: Digital Twins a New Frontier in Critical Infrastructure Protection  
Chair:  Nii Attoh-Okine, UD

TRACK 3: Learning Large-Scale Real-World Data for Characterizing and Improving Energy System Resilience  
Chair:  Feng Qui, ANL  
Presenters  
Alinson Xavier, ANL  
Feng Qui, ANL  
Rui Yao, ANL

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