Resilience Week 2015 Overall Track Plan

Monday, August 17

5:00	Registration *[Grand Ballroom CD & Foyer]*

Tuesday, August 18 (Special Topics Sessions)

Time	Resilience Models and Measures Track *[Riverview A]* Chair: Marco Carvalho, FIT; Michael Atighetchi, BBN	Mixed Human-Automation Resilience Track *[Riverview C]* Chairs: Frank Ferrese, NAVSEA; Will Nothwang, ANL Ron Boring, INL	Resilient Infrastructure Solutions User Group Track *[Riverview B]* Chairs: John Hummel, ANL; David Alderson, NPS; Cherrie Black, INL; Sean McAraw, INL
7:00	Registration *[Grand Ballroom Foyer]*		
8:00	Symposium Opening Plenary *[Grand Ballroom ABC]* Andrew Bochman, INL		
8:20	Logistics *[Grand Ballroom ABC]*		
8:30	Borislava Simidchieva, BBN *Towards a Decision Support Framework for Comparing Cyber Defense Configurations*	Keynote Speaker Vijay Kumar, UP	8:30 – 8:45 Welcome and Overview **Keynote Speaker** Thomas Seager, ASU *Reframing Infrastructure Resilience*
9:00	Sanjai Narain, ACS		
9:30	**Keynote Speaker** Pat Muoio, G2 *Talking about Resilience*	Brent Lance, ARL	
10:00		Jamie Lukos, SPAWAR, *Human integration in command and control environments: SPAWAR S&T perspectives*	Morning Break *[Grand Ballroom CD]*
10:30	Morning Break *[Grand Ballroom D]*		Federal Perspectives Panel Facilitator: Sean McAraw, INL Jamie Richards, DHS Igor Linkov, USACE April Salas, DOE
11:00	Ahmad Ridley, DoD *Cyber-Resilience – Application to Automated Decision-Making and Automated Response*	Julie Adams, Vanderbilt, *The impact of uncertainty on human-system interaction*	
11:30	Brian Johnson, University of Idaho, *Power System Protection and Resilient Metrics*	Ron Boring, INL, *A Review of Human Reliability Needs in the U.S. Nuclear Industry*	
12:00	Hosted Lunch with Plenary Speaker *[Grand Ballroom ABC]* Pramod Khargonekar, Assistant Director for Engineering Directorate, NSF *Enabling Research for Infrastructure Resilience: An NSF Perspective*		
1:30	**Keynote Speaker** Frank Lewis, UT-Arlington, *Reinforcement Learning for Resilient Control in Cooperative and Adversarial Multi-agent Networks: CPS Applications in Microgrid and Human-Robot Interactions*	Eugene (Mike) Golda, NAVSEA	**Lightning Talks** John Hummel, *Developing Frameworks to Support Resiliency Assessment* Susan Clark, *A Capabilities Approach to Resilience* Paul Lewis, *Critical Infrastructure Logical Dependencies and Interdependencies* Nii Attoh-Okine, *Introducing Big Data Concepts in Resilience Engineering Analysis* David Judi, *Non-Stationary Climate Considerations for Infrastructure Resilience*
2:00		**Facilitated Discussion: Future Directions** Facilitator: Ron Boring, INL	
2:30	**Facilitated Discussion: Future Directions** Marco Carvalho, FIT	**Keynote Speaker** Najmedin Meshkati, USC	**2:10 – 3:30 R&D Perspectives Panel** Facilitator: David Alderson, NPS Stewart Cedres, DOE Steve Conrad, SNL Rita Foster, INL John Hummel, ANL Timothy McPherson, PNNL
3:30	Reception and Poster Session *[Grand Ballroom D & Foyer]*		
6:00	Adjourn for Day		

Wednesday, August 19 (Papers)

Time	Cyber Track *[Washington]* Chairs: Marco Carvalho, FIT; Michael Atighetchi, BBN	Control Track *[Riverview C]* Chairs: Frank Ferrese, NAVSEA; Kevin Schultz, JHU APL	Cognitive-Communications Track *[Riverview A]* Chairs: Dr. Roger Lew, UI; Jie Wu, Temple	Resilient Infrastructure Track *[Riverview B]* Chairs: David Alderson, NPS; Cherrie Black, INL; Sean McAraw, INL
7:30	**Registration** *[Grand Ballroom Foyer]*			
8:20	**Logistics** *[Grand Ballroom ABC]*			
8:30	**Keynote Speaker** *[Grand Ballroom ABC]* Patrick McDaniel, Penn State, *The Importance of Measurement and Decision Making to a Science of Security and Resilience*			**Keynote Speaker** Stephen Cauffman, NIST *NIST Community Resilience Program*
9:00				**Local Perspectives Panel** Facilitator: Cherrie Black, INL Suzanne Chiavari, American Water Drew Davis, PECO William Ryan, DHS David Weinstein, NJOHSP
	Cyber Threat/Vulnerability	*Agent Based Control for Power*	*Cognitive-Control*	
9:30	David Last, AFRL*, Using Historical Software Vulnerability Data to Forecast Future Vulnerabilities*	Qiangguo Ren, Temple, *Demand-supply Balancing using Multi-agent System for Bus-oriented Microgrids*	Kasun Amarasinghe, VCU, *Optimal Stop Word Selection for Text Mining in Critical Infrastructure Domain*	
10:00	*Goncalo Martins, Vanderbilt, *Towards a Systematic Threat Modeling Approach for Cyber-physical Systems*	Ning Gong, Temple, *Consensus Power Agent Model and Stability Analysis for (n,k)-star Power Grids*	Ron Boring, INL*, Differences In Trust Between Two Types Of Alarms And Events Within A Nuclear Power Plant Control Simulation*	
10:30	**Morning Break** *[Grand Ballroom D]*			
	Cyber Response	*Cyber-Control Tutorial*	*Cognitive-Control*	
11:00	Marco Carvalho, FIT, *MIRA: A Support Infrastructure for Cyber Command and Control Operations*	Quanyan Zhu, NYU, *Meta-Network Models for Resilient Interdependent Infrastructures*	Roger Lew, UI, *A Tool for Assessing the Text Legibility of Digital Human Machine Interfaces*	**Keynote Speaker** Scott Andes, The Brookings Institution *Going Local: Connecting the National Labs to their Regions for Innovation and Growth*
11:30	Richard Skowyra, MITLL, *Multi-Variant Execution to Protect Unpatched Software*		Thomas Ulrich, UI, *Control Board Digital Interface Input Devices – Touchscreen, Trackpad, or Mouse?*	
12:00	**Hosted Lunch with Plenary Speaker** *[Grand Ballroom ABC]* Nassim Taleb, Distinguished Professor of Risk Engineering, New York University *Fragility, Antifragility, and Convex Responses*			
1:30	**Keynote Speaker** *[Grand Ballroom ABC]* Wenjing Lou, Virginia Tech and NSF *Enhancing Access to the Radio Spectrum: Challenges and Research Opportunities*			**Lightning Talks** Steve Flynn, *A Framework for Establishing Infrastructure Resilience Priorities* Lin Ni, *Toward Resilient Emergency Response Infrastructure: Organizational, Decision Making, and Public Relation Aspects* Emily Frye, *Regional Resilience Continuum* Ryan Hruska, *Natural Language Processing for Critical Infrastructure All Hazards Analysis* Frederic Petit, *Campus Wide Resilience Assessment* Nivedita Nukavarapu, *Petri Net Based Mutli Agent Simulation of Healthcare CI in a GIS Framework* Mark A. Pepple, *Resilience within Chemical-Pharmaceutical Interdependencies* Shane Cherry, *Visualizing Geospatial Data to Support Critical Infrastructure Interdependency Analysis and Situational Awareness*
	Physical Access Control	*Game Theoretic Control*	*Cognitive-Control Tutorial*	
2:30	Clyde Carryl, FAU, *Implementation of the Universal Physical Access Control System (UPACS)*	Chukwuemeka Aduba, Arris Inc, *Resilient Cumulant Game Control for Cyber-Physical Systems*	David Woods, OSU, *Is a comprehensive theory for resilient control possible: The view from safety of complex socio-technical systems*	

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3:00	Clyde Carryl, FAU, *Formal Verification of the Universal Physical Access Control System*	*Ali Davoudi, UTA, *Active Loads of a Microgrid as Players in a Differential Game*		Collective Q&A
3:30	**Afternoon Break** *[Grand Ballroom D]*			
	Cyber-Control	*Energy Systems Control and WIP*	*Cyber-Communications*	
4:00	Chika Nwankpa, Drexel, *A Network Delay-based Sensitivity Analysis of Information-embedded Power Electronic Converter Systems*	Gordon Parker, MTU, *Optimal Dc Microgrid Power Apportionment and Closed Loop Storage Control to Mitigate Source and Load Transients*	Pouya Ostovari, *Temple, Cooperative Mobile Internet Access with Opportunistic Scheduling*	**University Perspectives Panel** Facilitator: David Alderson, NPS Steve Flynn, Northeastern David Nicol, UIUC Jennifer Schneider, RIT Tom Seager, ASU David Woods, OSU
4:30	Danai Chasaki, Vanderbilt, *Packet Scheduling Attacks on Shipboard Networked Control Systems*	Subbaram Naidu, UMD, *Wind Energy Conversion Systems Control Using Differential SDRE*	Jian Ren, MSU, *Security and Efficiency Trade-offs for Cloud Computing and Storage*	
5:00	Wente Zeng, NCSU, *A Resilient Distributed Energy Management Algorithm for Economic Dispatch in the Presence of Misbehaving Generation Units*	Bogdan Niemoczynski, Temple*, Nonlinear Control of Magnetization Process*	Jiang Xie, UNCC, *Practical Fast Multiple Radio Blind Rendezvous Schemes in Ad-Hoc Cognitive Radio Networks*	
5:30		Alex Wallar, UMD, *Distributed Information-Theoretic Target Detection Using Physics-Inspired Motion Coordination*		
5:45	**Adjourn Meetings**			
6:00	**Networking Reception at Chart House Speaker, Temple Provost Hai-Lung Dai**			
7:30	**Adjourn for Day**			

* Best Papers

Thursday, August 20 (Special Topics Sessions)

Time	Cyber Resilience Track *[Riverview AB]* **Chairs:** Frank Ferrese, NAVSEA; David Scheidt, JHU APL, Marco Carvalho, FIT; Nick Multari, PNNL	Resilient Infrastructure Track *[Riverview C]* **Chairs:** David Alderson, NPS; Cherrie Black, INL; Sean McAraw, INL
8:00	**Registration** *[Grand Ballroom Foyer]*	
8:20	**Logistics** *[Grand Ballroom ABC]*	
8:30	**Plenary Speaker** *[Grand Ballroom ABC]* Richard Danzig, Director of the Center for a New American Security	
9:30*	**Keynote Speaker** Frederick Sheldon, UI, "*Quantifying the impact of unavailability in cyber physical environments*"	**Lightning Talks** Andjelka Kelic, *Refinery Control Systems in National Transportation Fuels Modeling* N. Eva Wu, *Diagnosis, Device Placement, and Auxiliary Control for Resilience* Julia Phillips, *Electric Distribution System Resilience* Egemen Cetinkaya, *Evolution of Global Crude Oil Dependence: A Weighted-Directed Graph Analysis* David Alderson, *Rethinking Cost-Benefit Analysis for Resilience Investment*
10:30	**Morning Break** *[Grand Ballroom D]*	
11:00	Barrett Adams-Simmons, DHS	**Keynote Speaker** Jalal Mapar, DHS, *Grand Challenge Problems*
12:00	**Hosted Lunch with Plenary Speaker** *[Grand Ballroom ABC]* Pat Hoffman, Assistant Secretary, DOE-OE	
1:30	**Keynote Speaker** Paul Stockton, Sonecon, *Superstorm Sandy: Lessons Learned for Designing a Post-Cyberattack Power Restoration System*	**Special Session: Northeast Utilities – Cyber/Resilience** <u>Facilitators</u> Cherrie Black, Idaho National Laboratory Stephanie Hamilton, Brookhaven National Laboratory Rita Foster, Idaho National Laboratory <u>Moderator</u> Terry Boston, PJM <u>Panelists</u> Jeffrey Bowser, JCP&L Tim Roxey, NERC Samara Moore, PECO
2:30	Matt Gibson, EPRI *Managing Technology Risk: Why Discipline Matters*	
3:00	Greg Shannon, CERT	
3:30	**Afternoon Break** *[Grand Ballroom D]*	
4:00	**Panel on Research Needs and Challenges in Cyber Resiliency** <u>Facilitator: Marco Carvalho, FIT</u> Arlette Hart, FBI Nick Multari, PNNL Craig Rieger, INL Greg Shannon, CERT	**Facilitated Discussion: Gap Analysis, Priorities, Future Planning** <u>Facilitators</u> David Alderson, NPS Jamie Richards, DHS
5:00	**Adjourn**	

*Closed executive session to be held in William Penn Boardroom, 3rd Floor. Facilitator: Brent Stacey, INL.