

# 8th CSIRW Program Agenda

Effective 12/5/12

## Tuesday

TIME	8-Jan-13	8-Jan-13	8-Jan-13	8-Jan-13	8-Jan-13	8-Jan-13
	<p>Transportation Provided from Doubletree Hotel and the ORNL Guest House to ORNL (Departing at 7:00am) Badges will be available upon arrival at the conference center. Breakfast is available all three days at the conference center starting at 7:45am</p>					
8:00-8:05	Introductory Remarks: Thom Mason, ORNL Director and Brent Park, ALD GSD (Introduced by Joe Trien, CSIR Group Leader)					
8:05-8:50	Plenary Keynote Speaker: LTG Rhett A. Hernandez, CG USArmy Cyber Command – Invited					
8:50-9:30	Plenary Speaker: Donna Dodson, Deputy Chief Cyber Security Advisor & Division Chief Cyber Security Division, NIST -Confirmed					
9:30-9:45	Break					
9:45-11:15	<p><b>CIO Panel (Game Changing Technologies)</b> Panel Moderator: Ken Neves Panelist: Robert F. Brese, DOE CIO – Invited; Mike Bartell, ORNL CIO (invited); Jerry Johnson, PNNL CIO (invited); Betsy Woudenberg, IntelligenceArts (invited); John Abeles, CEO Systems 1 Inc. (invited)</p>					
11:15-12:30	<p>Working Lunch (Poster Session) Supercomputing Center Tour (12:00-12:30)</p>					
12:30-1:10	Plenary Speaker: Professor Ravishakar K. Iyer, UIUC - Confirmed					
1:10-1:30	Break					
	Room A	Room B	Room C	Emory Room	JICS Auditorium Building 5100	Cumberland Room 219
	Designed in Security (DIS)	Tailored Trustworthy Spaces (TTS)	Cyber Economic Incentives (CEI)	Emerging Threats (ET)	Controlled Access Session	Cyber Defender Workshop
	Chair: Rose Gamble	Chair: Richard Brooks	Chair: Ki Park	Chair: Manimaran Govindarasu	Chair: Joseph Trien	Chair: Ken Neves
1:30-2:00	Frederick Sheldon; Jingshan Huang; Jiangbo Dang; Daniel Fetzer; Stuart Goose; Jonathan Kirsch; David Manz; Thomas Morris; Dong Wei. Intrinsically Resilient Energy Control Systems	James Solderitsch; Joshua Howes; Ignatius Chen; Jonté Craighead. Enabling Trustworthy Spaces via Orchestrated Analytical Security	Rayford Vaughn; Thomas Morris; Elena Sitnikova. Development and Expansion of an Industrial Control System Security Laboratory and an International Research Collaboration	Rodrigo Miani; Michel Cukier; Bruno Zarpelao; Leonardo Mendes. Relationships Between Information Security Metrics: An Empirical Study		Network Enterprise Security: Part A
2:00-2:30	Richard Brooks; Benafsh Husain; Seok Bae Yun. Security and Performance Evaluation of Security Protocols	Hui Lin; Adam Slagell; Catello Di Martino; Zbigniew Kalbarczyk; Ravishankar Iyer. Adapting Bro into SCADA: Building a Specification-based Intrusion Detection System for the DNP3 Protocol	Robert Abercrombie; Frederick Sheldon; Katie Hauser; Margaret Lantz; Ali Mill. Failure Impact Analysis of Key Management in AMI Using Cybernomic Situation Assessment (CSA)	Justin Beaver; Christopher Symons; Robert Gillen. A Learning System for Discriminating Variants of Malicious Network Traffic	2:00-3:00 DOD Strategic Initiatives in Cyber Security Colloquy (Dr. Larry Wagoner-DOD; Charles Nelson-DOD; 2 others TBN)	
2:30-2:45	Break					
2:45-3:15	Erik Ferragut; Jason Laska; Alexander Melin; Bogdan Czejdo. Addressing the Challenges of Anomaly Detection for Cyber Physical Energy Grid Systems	Chen Lu; Richard Brooks. Timing Analysis in P2P Botnet Traffic Using Probabilistic Context- Free Grammars	Ike Patterson; James Nutaro; Glenn Allgood; Teja Kuruganti; David Fugate. Optimizing investments in cyber-security for critical infrastructure	Jason Carter. Locating Executable Fragments with Concordia: A Scalable, Semantics-based Architecture	3:15-3:30 Break (Controlled Access FOUO)	Network Enterprise Security: Part B
3:15-3:45	Rui Xie; Rose Gamble. An Architecture for Cross-Cloud Auditing of Service Cloud	Lianyu Zhao; Richard Brooks. Tailoring Trusted Semantic Information	Yevgeniy Vorobeychik; Michael Lee; Adam Anderson; Robert Mitchell Adair; William Dee Atkins; Alan Berryhill; Daming Dominic Chen; Ben Cook; Jeremy Erickson; Steve Hurd; Ron Olsberg; Lyndon Pierson; Owen Redwood. FIREAXE: The DHS Secure Design Competition Pilot	Charles Payne; Jason Sonnek; Steven Harp. XEBHRA: A Virtualized Platform for Cross Domain Information Sharing	3:15-4:15 DOD Strategic Initiatives in Cyber Security Colloquy (continues)	
3:45-4:15	Katherine Cameron; Richard Brooks; Juan Deng. Cost-Effective Quality Assurance of Wireless Network Security	Lahiru Gallege; Dimuthu Gamage; James Hill; Rajeev Raje. Trust Contract of a Service and its role in Service Selection for Distributed Software Systems	Invited Speaker Jeffrey Bradshaw Multi-Agent Systems for Deep Understanding of Cyberspace	Invited Speaker Christopher Robinson-Mallett		Forensic Tools and Detection
4:15-4:30	Break					
4:30-5:30	<p>Poster Session and Vendor Fair (VIP tour of Vendor Booths)</p>					
5:30-7:30	<p>Reception &amp; Poster Session (Conference Center 2nd Floor) 6:00-7:00 Reception Speaker Ms. Rebecca Bace, University of South Alabama  (7:30 Transportation Provided to Doubletree Hotel and ORNL Guest House)</p>					

# 8th CSIRW Program Agenda

Effective 12/5/12

## Wednesday

TIME	9-Jan-13	9-Jan-13	9-Jan-13	9-Jan-13	9-Jan-13	9-Jan-13
	Transportation Provided from Doubletree Hotel and the ORNL Guest House to ORNL (Departing at <u>7:00am</u> ) Badges will be available upon arrival at the conference center. Breakfast is available all three days at the conference center starting at 7:45am					
8:00-8:05	Introductory Remarks: Jeff Nichols, Director, Computational Sciences Directorate, ORNL (tentative)					
8:05-8:50	<b>Plenary Keynote Speaker:</b> RADM Matthew Klunder, Chief of Naval Research (invited)					
8:50-9:30	<b>Plenary Speaker:</b> MG (Ret) James O. Poss, Fmr AF Asst Dep Chief of Staff for ISR (confirmed) - Cross-Disciplinary Approach to Cyber Security					
9:30-9:45	Break					
9:45-11:15	<b>Federal Cybersecurity R&amp;D Panel</b> Panel Moderator: William Newhouse, NIST (Confirmed)/Doug Maughan, DHS (Invited) Panelists: Carol Hawk-DOE; Robert Osborn-NNSA; Jeremy Epstein-NSF; Mark Mayberry-USAF (invited); Darren Chambers-NRO (invited)					
11:15-12:30	Working Lunch (Poster Session) Supercomputing Center Tour (12:00-12:30)					
12:30-1:10	<b>Plenary Speaker:</b> Carol Hawk, Program Manager, Cyber Security for Energy Delivery Systems - Confirmed					
1:10-1:30	Break					
	Room A	Room B	Room C	Emory Conference Room	Building 5300S MRF Melton Hill Conference Room Classified Sessions Chair: Joseph Trien	Cumberland Room 219
	Designed in Security (DIS)	Moving Target Defenses (MTD)	Other CSIRW Relevant Topics	Emerging Threats (ET)	1:00 - 1:45	Cyber Defender Workshop
	Chair: Jeffrey McDonald	Chair: Marco Carvalho	Chair: Annarita Giani	Chair: Christopher Robinson-Mallett	NRO Research Overview	Chair: Ken Neves
1:30-2:00	Ravi Akella; Bruce McMillin. Modeling and Verification of Security Properties for Critical Infrastructure Protection	Janusz Zalewski; Steven Drager; William McKeever; Andrew J. Kornecki. Threat Modeling for Security Assessment in Cyberphysical Systems	Annarita Giani; Russell Bent. Challenges in Smart Grid Cyber Security	Zach Harbort; Conor Fellin. Gesture-Oriented Data Sharing	Darren Chambers (Controlled Access: Clearance Must be Passed)	Network Architecture as a Defense Part A
2:00-2:30	Emilie Hogan; John Johnson; Mahantesh Halappanavar. Graph Coarsening for Path Finding in Cybersecurity Graphs	James Nutaro; Glenn Allgood; Teja Kuruganti; Darren Highfill. Using simulation to engineer cybersecurity requirements	Shengyi Pan; Thomas Morris; Uttam Adhikari; Vahid Madani. Causal Event Graphs Cyber-physical System Intrusion Detection System	Adam Hahn; Manimaran Govindarasu. Model-based Intrusion Detection for the Smart grid (MINDS)	2:00-3:30 Keynote Presentation Dr. Steven King, Deputy Director for Cyber Technology Research Directorate, OASD	
2:30-2:45	Break					
2:45-3:15	Avinash Desai; Micheal Hsiao; Chao Wang; Leyla Nazhandali; Simin Hall. Interlocking Obfuscation for Anti-Tamper Hardware	Neal Dawes; Bryan Prosser; Errin Fulp; David McKinnon. Using Mobile Agents and Overlay Networks to Secure Electrical Networks	Read Sprabery; Thomas Morris; Shengyi Pan; Uttam Adhikari; Vahid Madani. Protocol Mutation Intrusion Detection for Synchronopasor Communications	Jarilyn Hernández; Line Pouchard; Jeffrey McDonald. Developing a Power Measurement Framework for Cyber Defense	(Research and Engineering) Department of Defense (DoD) (Controlled Access Clearance Must be Passed)	Network Architecture as a Defense Part B
3:15-3:45	Cindy Finke; Jonathan Butts; Mills Robert. ADS-B Encryption: Ensuring Confidentiality in the Friendly Skies	Ganesh Ram Santhanam; Zachary Oster; Samik Basu. Identifying A Preferred Countermeasure Strategy for Attack Graphs	David Schwab; Li Yang. Entity Authentication in a Mobile-Cloud Environment	Hewett Rattikorn; Phongphun Kijsanayothin. Securing System Controllers in Critical Infrastructures		
3:45-4:15	Jason Haas; J.D. Doak; Jason Hamlet. Machine-Oriented Biometrics and Cocooning for Dynamic Network Defense	Terry Benzel; Ryan Goodfellow; Robert Braden; David Bakken. First Steps Toward Scientific Cyber-Security Experimentation in Wide-Area Cyber-Physical Systems	Rick Linger; Mark Pleszkoch; Stacy Prowell; Kirk Sayre; Scott Ankrum. Computing Legacy Software Behavior to Understand Functionality and Security Properties: An IBM/370 Demonstration	Maggie Cheng; Quanmin Ye. Visualizing Graph Features for Scanning Attack Detection		
4:15-4:30	Break					
4:30-6:00	<b>Cyber Defenders Panel (Number One Near/Long Term Threat)</b> Panel Moderator: Ken Neves Panelists: TBA					
6:00-6:30	Transportation to Doubletree Hotel					

6:30-8:30

**Buffet Banquet at Doubletree Hotel** (Chicken, Beef, Vegetarian)  
Plenary Speaker: TBD

Transportation Provided from the Doubletree Hotel to the ORNL Guest House (Departing 8:45)

# 8th CSIRW Program Agenda

Effective 12/5/12

## Thursday

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8:00-8:05	Introductory Remarks: Dr Thom Mason, ORNL Lab Director (Pending)					
8:05-8:50	Plenary Keynote Speaker: Dr. Steven Chu, Secretary of Energy (Pending)					
8:50-9:30	Plenary Speaker: Robert Osborn, CIO, NNSA / Director CSL (Confirmed)					
9:30-9:45	Break					
9:45-11:15	Industry Panel: <b>Industry Cybersecurity Challenges and Requirements</b> Panel Moderator: Don Paul, Executive Director, USC Energy Institute (confirmed) Panelists: Peter Breunig-Chevron; Himanshu Khurana-Honeywell; Gary Harbison-Monsanto; Isaac Cohen-United Technologies Research Center (confirmed)					
11:15-12:30	Working Lunch (Poster Session) Supercomputing Center Tour (12:00-12:30)					
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	Designed in Security (DIS)	Moving Target Defenses (MTD)	Other CSIRW Relevant Topics	Emerging Threats (ET)	FOUO Sessions	Cyber Defender Workshop
	Chair: Michael Grimaila	Chair: Marco Carvalho	Chair: Annarita Giani	Chair:	Chair: Joseph Trien	Chair: Ken Neves
12:30-1:00	Travis Bauer; Rich Colbaugh; Kristin Glass; David Schnizlein. Use of Transfer Entropy to Infer Relationships from Behavior	Victor Balogun; Axel Krings. On The Impact of Jamming Attack on Cooperative Spectrum Sensing in Cognitive Radio Networks	Ahmed Serageldin; Axel Krings; Ahmed Abdel-Rahim. A Survivable Critical Infrastructure Control Application	Marco Carvalho C-squared Framework for Moving Target Defense		Obscuration and Intelligent Defense
1:00-1:30	Sean Crosby; Marco Carvalho; Daniel Kidwell. A Layered Approach to Understanding Network Dependencies on Moving Target Defense Mechanisms	Christopher Oehmen; Elena Peterson; Jeremy Teuton. Evolutionary Drift Models for Moving Target Defense	Hasan Cam; Pierre Mouallem. Mission-Aware Time- Dependent Cyber Asset Criticality and Resilience	Daniel Bilal, Siege Technologies, Inc. A Manifestation of Moving Target Defense		
1:30-1:45	Break					
1:45-3:15	Cyber Sciences Laboratory (CSL) Panel Panel Moderator: Bob Osborn, NNSA Panelists: Miles McQueen-INL, Mike Fisk-LANL, Sean Peisert-LBL, Joseph Trien-ORNL, Scott Godwin-PNNL, Celeste Matarazzo-LLNL, David White-SNL					
3:15	8th CSIRW Workshop Concludes *Transportation Provided to Doubletree Hotel and the ORNL Guest House (Departing at 3:30 pm)					

## Cyber Defender Workshop (CDW):

This workshop (within CSIRW) is by invitation only. Please contact Ken Neves ([neves3@llnl.gov](mailto:neves3@llnl.gov)) if were not invited and wish to attend. CDW has the following goals:

- Gather a group of DOE cyber defenders [who are expert in their site defense, and have experience in the ongoing persistent threats and their mitigations] to share experiences, identify current practices and establish a Cyber Defense Vision.
- The group will assess best practices among their sites and populate a methods, tools and tactics database for future reference on a number of topical areas (e.g., APT, SE, etc.) selected for the 4 sessions.
- They will identify the top threats in a number of specific areas related to “edge” defense, networks, and rate risks among widely used infrastructure applications ranging from email to social networks.
- Information will be codified in a report (reviewed after the conference by attendees) that establishes a maturity model for cyber defense as we envision from current practices to desired vision. [This will provide a discussion document for cyber defenders, cyber security researchers, and industry collaborators in ongoing interactions.]
- Identify emerging threats, and our greatest areas of concern.
- Information provided and produced from this workshop will probably be designated OOU.

The underlying goal for attendees of the CDW is that attendees will take-in some of the plenary sessions and other activities of the Cyber Security and Information Intelligence Research (CSIR) Workshop ([CSIRW](#)). This year CSIRW will have elements of the program that will foster discussion, panels and plenary speakers of interest to both cyber defenders and cyber security researchers. While these communities overlap, they rarely have an opportunity in a professional venue to interact.

The workshop will take place in 4 sessions during the CSIRW, and participation is by invitation to specific individuals and sites to keep the group small enough to be action oriented and to fit into the work session facilities. The participants will have registration options for attending the general conference, or as workshop only participants. The workshop does not require conference approval, although CSIRW is a DOE approved conference. Anyone not invited, but wishing to attend should contact, Dr. Kenneth Neves ([neves3@llnl.gov](mailto:neves3@llnl.gov)) prior to the conference, or the day prior to any session desired to attend. Space limits more open attendance.