

Network Sciences and Protection (Rad Hard)

Monday July 18, 2016					w1c
Start - End	dT	Title	Institution	Presenter	TA
8:00 - 8:25	25	Daily Instructions and Computer Intro	DTRA / JHU		
8:25 - 8:40	15	Intro to J9BA Network Sciences and Intro to Infrastructure Response	DTRA	Paul Tandy	
8:40 - 9:05	25	Optimizing Robustness of Large-Scale Information and Infrastructure Networks	Rensselaer Polytechnic Institute	Boleslaw Szymanski	2
9:05 - 9:10	5	Q/A and Computer Feedback			
9:10 - 9:30	20	Defending Interdependent Infrastructure Systems	University of Texas, Austin	Ross Baldick (Alexis Kwasinski)	2
9:30 - 9:35	5	Q/A and Computer Feedback			
9:35 - 9:40	5	Program Execution and Funding Expenditures Brief	DTRA	LT Col Rupanovic	
9:40 - 9:55	15	~ Break ~			
9:55 - 10:15	20	Probabilistic Characterization of Precursors to WMD-induced Cascading Failures in the Electric-cyber Infrastructure: An Integrated Physical-Social Network	University of New Mexico	Majeed Hayat	2
10:15 - 10:20	5	Q/A and Computer Feedback			
10:20 - 10:45	25	Understanding Dynamic Interactions Post-WMD Attack in Interdependent Networks	University of Texas, Austin	Ross Baldick (David Alderson)	2
10:45 - 10:50	5	Q/A and Computer Feedback			
10:50 - 11:15	25	Advancing Knowledge of Network Theory for Understanding Robustness	Los Alamos National Laboratory	Aric Arild Hagberg	2
11:15 - 11:20	5	Q/A and Computer Feedback			
11:20 - 11:45	25	Operational Resilience of Command and Control Systems to Maintain Multilayered Network Functionality in Response to Large-Scale Disruptive Events	Naval Postgraduate School	David Alderson	2
11:45 - 11:50	5	Q/A and Computer Feedback			
11:50 - 1:20	90	~ Lunch ~			
1:20 - 1:45	25	Network Adaptability from WMD Disruption and Cascading Failures	Los Alamos National Laboratory	Michael Chertkov	2
1:45 - 1:50	5	Q/A and Computer Feedback			
1:50 - 2:15	25	Robustness, Resilience and Emergent Properties of Interdependent Networks	University of California, Davis	Raissa D'Souza (Paul Hines)	2
2:15 - 2:20	5	Q/A and Computer Feedback			
2:20 - 2:45	25	Availability, Interoperability, Robustness and Recovery of Interdependent Networks under WMD Attack	Boston University	Eugene Stanley	2
2:45 - 2:50	5	Q/A and Computer Feedback			
2:50 - 3:05	15	~ Break ~			
3:05 - 3:30	25	Multiscale Networks with Stochastic Interactions: Resiliency and Recovery Optimization under Large-Scale Attacks	University of Iowa	Pavlo Krokhmal	2
3:30 - 3:35	5	Q/A and Computer Feedback			
3:35 - 4:00	25	Interdependent Network Responses to WMD: Dynamics Modeling, Impact Analysis, and Adaptive Control Techniques	University of Florida	My Tra Thai	2
4:00 - 4:05	5	Q/A and Computer Feedback			
4:05 - 4:30	25	Modeling, Analysis and Control for Robust Interdependent Networks	Ohio State University	Ness Shroff	2
4:30 - 4:35	5	Q/A and Computer Feedback			
4:35 - 5:35	60	ORA Demo	Carnegie Mellon University	Kathleen Carley	2

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Tuesday July 19, 2016					w1c
Start - End	dT	Title	Institution	Presenter	TA
8:00 - 8:25	25	Daily Instructions and Computer Intro	DTRA / JHU		
8:25 - 8:40	15	Continue Infrastructure Response	DTRA	Paul Tandy	
8:40 - 9:05	25	Adaptive Algorithms for Overload Control Under Cascading Failures in Multi-Layer Networks	Ohio State University	Atilla Eryilmaz	2
9:05 - 9:10	5	Q/A and Computer Feedback			
9:10 - 9:35	25	Foundations for Network Resilience Against Cascading Failures: Modeling, Fundamental Limits and Robust Network Architecture	Arizona State University	Junshan Zhang	2
9:35 - 9:40	5	Q/A and Computer Feedback			
9:40 - 9:55	15	~ Break ~			
9:55 - 10:00	5	Program Execution and Funding Expenditures Brief	DTRA	LT Col Rupanovic	
10:00 - 10:20	20	Towards a Theory of Closed-Loop Robustness for Real-Time Learning and Control of Multilayered Networks under Cascading Failures	Arizona State University	Hanghang Tong	2
10:20 - 10:25	5	Q/A and Computer Feedback			
10:25 - 10:50	25	State Estimation and Optimal Recovery in Networks with Massive Cascading Failures	Pennsylvania State University	Thomas LaPorta	2
10:50 - 10:55	5	Q/A and Computer Feedback			
10:55 - 11:20	25	Modeling and Analysis of Large-scale Cascading Failures in Inter-Dependent Physical Networks via Dynamic Flow Models	University of Minnesota	Zhi-Li Zhang	2
11:20 - 11:25	5	Q/A and Computer Feedback			
11:25 - 11:50	25	Balanced Coordinated Algorithms for Damage Mitigation and Resource Allocation in Network Systems	University of Nebraska	Qing Hui	2
11:50 - 11:55	5	Q/A and Computer Feedback			
11:55 - 1:25	90	~ Lunch ~			
1:25 - 1:50	25	Theory-Based Approaches for Complex Probabilistic Software Verification and Validation	Naval Postgraduate School	Doron Drusinsky	2
1:50 - 1:55	5	Q/A and Computer Feedback			
1:55 - 2:20	25	Getting it Right the First Time: Predicted Performance Guarantees from the Analysis of Emergent Behavior in Autonomous and Semi-autonomous Systems	Georgia Tech	Ronald Arkin	2
2:20 - 2:25	5	Q/A and Computer Feedback			
2:25 - 2:50	25	Uncovering and Penetrating CBRN Networks: A General Methodology for Mapping Covert Social Networks	University of South Carolina	Matthew Brashears	2
2:50 - 2:55	5	Q/A and Computer Feedback			
2:55 - 3:10	15	~ Break ~			
3:10 - 3:35	25	Robustness Analysis and Anomaly Detection of Interdependent Physical and Social Networks	University of Illinois	Tarek Abdelzaher	2
3:35 - 3:40	5	Q/A and Computer Feedback			
3:40 - 4:05	25	Understanding Societal Response to Emergencies	Northeastern University	Albert-Laszlo Barabasi	2
4:05 - 4:10	5	Q/A and Computer Feedback			
4:10 - 4:35	25	Remote Capabilities Assessment	Carnegie Mellon University	Kathleen Carley	2
4:35 - 4:40	5	Q/A and Computer Feedback			
4:40 - 5:05	25	Power Grid Vulnerability and Resilience to Geographically Correlated Failures	Columbia University	Gil Zussman (Eytan Modiano)	2
5:05 - 5:10	5	Q/A and Computer Feedback			

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Wednesday July 20, 2016					w1c
Start - End	dT	Title	Institution	Presenter	TA
8:00 - 8:25	25	Daily Instructions and Computer Intro	DTRA / JHU		
8:25 - 8:30	5	Intro to Natural Language Processing	DTRA	Paul Tandy	
8:30 - 8:50	20	Spectral Graph Theory, Tree Decomposition, and Pseudospectral Graph Theory	Brigham Young University	Jeffrey Humpherys	2
8:50 - 8:55	5	Q/A and Computer Feedback			
8:55 - 9:15	20	Developing Language Independent Event Representations that are Inferrable from Linguistic Expressions in Large Text Corpora	University of New Mexico	William Croft	2
9:15 - 9:20	5	Q/A and Computer Feedback			
9:20 - 9:40	20	Research and Application of Representational Learning for Semantic Text Analysis	Middlebury College	Bryan Lee	2
9:40 - 9:45	5	Q/A and Computer Feedback			
9:45 - 10:05	20	eTASC - Empirical Evidence for a Theoretical Approach to Semantic Components	University of Colorado	Martha Palmer	2
10:05 - 10:10	5	Q/A and Computer Feedback			
10:10 - 10:15	5	Program Execution and Funding Expenditures Brief	DTRA	LT Col Rupanovic	
10:15 - 10:30	15	~ Break ~			
10:30 - 10:35	5	Intro to Protection of Sensitive Systems	DTRA	Jacob Calkins	
10:35 - 11:00	25	Fundamental Studies and Modeling of Radiation Effects in GaN-Based Heterostructures	University of Florida, Engineering	Stephen Pearton	3
11:00 - 11:05	5	Q/A and Computer Feedback			
11:05 - 11:30	25	Basic Radiation Studies in GaN Materials and Devices	University of California, Santa Barbara	James Speck	3
11:30 - 11:35	5	Q/A and Computer Feedback			
11:35 - 12:00	25	Study of Radiation Influenced Defects in (Al, Ga) N/Si	Naval Postgraduate School	T. R. Weatherford	3
12:00 - 12:05	5	Q/A and Computer Feedback			
12:05 - 1:35	90	~ Lunch ~			
1:35 - 2:00	25	Spin-Polarized Silicon Photonic and Electronic Interconnects	University of Michigan	Vanessa Sih	3
2:00 - 2:05	5	Q/A and Computer Feedback			
2:05 - 2:30	25	Radiation Tolerance of New Self-Healing Crystalline Memristors for Neuromorphic Computing	Georgia Tech	Alan Doolittle	3
2:30 - 2:35	5	Q/A and Computer Feedback			
2:35 - 3:00	25	Evaluation of Radiation-Induced Photonic Defects in Si, Ge, Chalcogenides and Polymers	MIT	Anu Agarwal	3
3:00 - 3:05	5	Q/A and Computer Feedback			
3:05 - 6:00		Poster Session			

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Thursday July 21, 2016					w1c
Start - End	dT	Title	Institution	Presenter	TA
8:00 - 8:25	25	Daily Instructions and Computer Intro	DTRA / JHU		
8:25 - 8:30	5	Continuation of Protection of Sensitive Systems	DTRA	Jacob Calkins	
8:30 - 8:55	25	Radiation-Induced Changes in Robotic Materials, Components, and Subsystems	Vanderbilt University	Arthur Witulski	3
8:55 - 9:00	5	Q/A and Computer Feedback			
9:00 - 9:25	25	Investigation of Physical Mechanisms for Radiation-Induced Effects in Non-Silicon Channel CMOS Devices	Vanderbilt University	Robert Reed	3
9:25 - 9:30	5	Q/A and Computer Feedback			
9:30 - 9:50	20	Correlation of Laser- and Ion-Induced Effects on Emerging Technologies	Vanderbilt University	Robert Reed	3
9:50 - 9:55	5	Q/A and Computer Feedback			
9:55 - 10:10	15	~ Break ~			
10:10 - 10:15	5	Program Execution and Funding Expenditures Brief	DTRA	LT Col Rupanovic	
10:15 - 10:40	25	Ion Irradiation Effects in Graphene-Silicon Hybrid Devices for Combating WMD	University of Manchester	Sarah Haigh	3
10:40 - 10:45	5	Q/A and Computer Feedback			
10:45 - 11:10	25	Radiation Effects in Two-Dimensional Material/High-K Dielectric Interfaces	University of Minnesota	Steven Koester	3
11:10 - 11:15	5	Q/A and Computer Feedback			
11:15 - 11:40	25	On the Radiation Sensitivity and Failure Mechanism of Critical Radiation-Hardened Robotic Components	Ohio State University	Lei Cao	3
11:40 - 11:45	5	Q/A and Computer Feedback			
11:45 - 1:15	90	~ Lunch ~			
1:15 - 1:35	20	Understanding Radiation Damage Mechanisms in MEMS/NEMS through Combined Optomechanical Interrogation and Micro-Analysis	Massachusetts Institute of Technology	Mo Li	3
1:35 - 1:40	5	Q/A and Computer Feedback			
1:40 - 2:05	25	Radiation Survivability of MEMS Microelectronic Circuits with Carbon Nanotube Field Emitters	Duke University	Jason Amsden	3
2:05 - 2:10	5	Q/A and Computer Feedback			
2:10 - 2:35	25	Exploration of Damage Mechanisms in MEMS Based Memory and Logic Devices	University of Louisville	Bruce Alphenaar	3
2:35 - 2:40	5	Q/A and Computer Feedback			
2:40 - 2:55	15	~ Break ~			
2:55 - 3:20	25	Basic Science of Radiation Effects in Ferroelectric Multi-Functional MEMS/NEMS	Georgia Tech	Nazanin Bassiri-Gharb	3
3:20 - 3:25	5	Q/A and Computer Feedback			
3:25 - 3:50	25	The Impact of Radiation Damage on Mechanical and Electrical Properties of MEM/NEM Structures	Vanderbilt University	Michael Alles	3
3:50 - 3:55	5	Q/A and Computer Feedback			
3:55 - 4:20	25	Radiation Effects in Nanoscale Electromechanical Logic Devices and Pathways Toward Robust Computing in Extreme Environment	Case Western Reserve University	Philip Feng	3
4:20 - 4:25	5	Q/A and Computer Feedback			

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Friday July 22, 2016					w1c
Start - End	dT	Title	Institution	Presenter	TA
7:30 - 7:55	25	Daily Instructions and Computer Intro	DTRA / JHU		
7:55 - 8:00	5	Continuation to Protection of Sensitive Systems	DTRA	Jacob Calkins	
8:00 - 8:25	25	Basic Radiation Effects Mechanisms in Chalcogenide-Based Nanoionic Structures	Arizona State University	Hugh Barnaby	3
8:25 - 8:30	5	Q/A and Computer Feedback			
8:30 - 8:55	25	Basic Single-Event and Total-Ionizing Dose Mechanisms in Antimony (Sb)-Based CMOS Transistors with High-K Dielectric	Pennsylvania State University	Suman Datta	3
8:55 - 9:00	5	Q/A and Computer Feedback			
9:00 - 9:25	25	Basic Single-Event and Total-Ionizing Dose Mechanisms in Ge/InGaAs-based CMOS Transistors with ALD High-k Dielectric	Leland Stanford Junior University	Krishna Saraswat	3
9:25 - 9:30	5	Q/A and Computer Feedback			
9:30 - 9:45	15	~ Break ~			
9:45 - 9:50	5	Program Execution and Funding Expenditures Brief	DTRA	LT Col Rupanovic	
9:50 - 10:15	25	Scaled InGaAs Nano-MOSFET Advanced Radiation Hardness Tests (SMART)	Purdue University	Peide Ye	3
10:15 - 10:20	5	Q/A and Computer Feedback			
10:20 - 10:45	25	Radiation Effects in III-V MOSFETs for Sub-10 nm CMOS	Massachusetts Institute of Technology	Jesus del Alamo	3
10:45 - 10:50	5	Q/A and Computer Feedback			
10:50 - 11:10	20	A New Approach to Develop Atomic Scale Understanding of Radiation Effects in Emerging Nanoscale Memory and Logic Materials and Devices	Pennsylvania State University	Patrick Lenahan	3
11:10 - 11:15	5	Q/A and Computer Feedback			
11:15 - 11:35	20	Radiation Characterization of STT-RAM Devices	University of California, Irvine	Nader Bagherzadeh	3
11:35 - 11:40	5	Q/A and Computer Feedback			
11:40 - 1:10	90	~ Lunch ~			
1:10 - 1:30	20	Characterizing Intrinsic and Extrinsic Radiation Effects in Oxide RRAM Devices	Arizona State University	Yu Shimeng	3
1:30 - 1:35	5	Q/A and Computer Feedback			
1:35 - 1:55	20	Radiation Effects in Vertical 2D Heterostructure Devices Formed Using Synthesized Materials	Georgia Tech	Eric Vogel	3
1:55 - 2:00	5	Q/A and Computer Feedback			
2:00 - 2:25	25	Atomically Thin Channel Materials and Dielectrics: Exploring Radiation Effects in Novel Two-Dimensional Crystals & Electronic Structures	Pennsylvania State University	Joshua Robinson (Igor Jovanovic)	3
2:25 - 2:30	5	Q/A and Computer Feedback			
2:30 - 2:55	25	Metamaterials and Metasurface to Realize Cloaks, Anti-Cloaks, Isolators and Energy Concentrators	University of Texas, Austin	Dimitrios Sounas	3
2:55 - 3:00	5	Q/A and Computer Feedback			