

Sensing WMD, Secure WMD, and Protection (Nuc Env)

Monday July 18, 2016					w1a
Start - End	dT	Title	Institution	Presenter	TA
8:30 - 9:00	30	Daily Instructions and Computer Intro	DTRA / JHU		
9:00 - 9:05	5	Intro to Standoff Detection	DTRA	Dave Petersen	
9:05 - 9:25	20	Filament-Based Raman Detection of Radioactive Materials	Temple University	Robert Levis	1
9:25 - 9:30	5	Q/A and Computer Feedback			
9:30 - 9:50	20	Active Detection of Fissile Materials via Laser-Induced Ionization-Seeded Plasmas	University of Michigan	Mark Hammig	1
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 - 10:35	20	Laser Standoff Detection of Shielded Fissile Material	Alakai Defense Systems, Inc.	Adam Hopkins	1
10:35 - 10:40	5	Q/A and Computer Feedback			
10:40 - 11:00	20	Standoff Detection of Effluents from Nuclear Processing via Structure Sensitive Photoionization and Microwave Scattering	Brown University	Peter Weber	1
11:00 - 11:05	5	Q/A and Computer Feedback			
11:05 - 11:25	20	Laser-Guided Microwave Beams for Remote Detection of WMDs	University of Arizona	Pavel Polynkin	1
11:25 - 11:30	5	Q/A and Computer Feedback			
11:30 - 11:50	20	Energy Balance in Radiation-Induced Atmospheric Effects	University of Southern Mississippi	Chris Winstead	1
11:50 - 11:55	5	Q/A and Computer Feedback			
11:55 - 1:25	90	~ Lunch ~			
1:25 - 1:45	20	Remote Detection of Nuclear Materials Using Air Breakdown Ionization Signatures	University of Maryland	Philip Sprangle	1
1:45 - 1:50	5	Q/A and Computer Feedback			
1:50 - 2:10	20	Coherent Magnon Interferometry in a Dense Quantum Gas	University of California, Berkeley	Dan Stamper-Kurn	1
2:10 - 2:15	5	Q/A and Computer Feedback			
2:15 - 2:35	20	Quantum-Enhanced Motion Sensing using Entangled Spins in Quantum Dots	University of California, Merced	Michael Scheibner	1
2:35 - 2:40	5	Q/A and Computer Feedback			
2:40 - 3:00	20	Gravitational Sensors Based on Atom Interferometry	Leland Stanford Junior University	Mark Kasevich (Onur Hosten)	1
3:00 - 3:05	5	Q/A and Computer Feedback			
3:05 - 3:20	15	~ Break ~			
3:20 - 3:40	20	Harmonic Analysis Methodologies for Autonomous Radiological Search: A Data Driven Approach	University of Maryland	Wojciech Czaja	1
3:40 - 3:45	5	Q/A and Computer Feedback			
3:45 - 4:05	20	Dynamic Placement of Sensors for Rapid Characterization of Radiation Threat	Carnegie Mellon University	Artur Dubrawski	1
4:05 - 4:10	5	Q/A and Computer Feedback			
4:10 - 4:30	20	Rapid Location of Radiation Sources in Complex Environments Using Optical and Radiation Sensors	Air Force Institute of Technology	John McClory	1
4:30 - 4:35	5	Q/A and Computer Feedback			
4:35 - 4:50	15	Networked Mobility-Enabled Detection of Mobile Weak Radiological Signatures	University of Delaware	Herbert Tanner	1
4:50 - 4:55	5	Q/A and Computer Feedback			

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Tuesday July 19, 2016					w1a
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 Technical Nuclear Forensics	DTRA	Dave Petersen	
8:30 - 8:50	20	Isotope Identification of Post-Detonation Debris using Advanced Mathematical Techniques	University of Illinois	Clair Sullivan	1
8:50 - 8:55	5	Q/A and Computer Feedback			
8:55 - 9:10	15	Novel Methods for Rapid, Reliable, and Rigorous Analysis of Gamma-ray Spectra Using Optimization and Nuclide Modeling	University of Texas, Austin	Steve Biegalski	1
9:10 - 9:15	5	Q/A and Computer Feedback			
9:15 - 9:30	15	Rapid Characterization of Fresh Nuclear Fallout using Full-Spectrum Inverse Transport Methods	NC State University	John Mattingly (Jonathan Mueller)	1
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 - 10:10	15	Reactive Membranes for Rapid Isotopic Analyses of Waterborne Special Nuclear Material	Clemson University	Scott Husson	1
10:10 - 10:15	5	Q/A and Computer Feedback			
10:15 - 10:30	15	Investigation of Uranium Molecular Species Formation Using Laser Ablation	University of Illinois	Davide Curreli	1
10:30 - 10:35	5	Q/A and Computer Feedback			
10:35 - 10:50	15	Chromatographic Mesoporous Carbon Nanomaterials for Post-Detonation Forensics Analyses	Colorado School of Mines	Brian Trewyn	1
10:50 - 10:55	5	Q/A and Computer Feedback			
10:55 - 11:15	20	Post-Detonation Radiological and Nuclear Forensics Using Laser-Assisted Mass Spectrometry in Open Air	University of Nebraska	Yongfeng Lu	1
11:15 - 11:20	5	Q/A and Computer Feedback			
11:20 - 11:40	20	Molecular Recognition and Selective Sequestration for Detection of Uranium, Neptunium, or Plutonium	Auburn University	Anne Gorden	1
11:40 - 11:45	5	Q/A and Computer Feedback			
11:45 - 12:05	20	Liquid Sampling-Atmospheric Pressure Glow Discharge (LS-APGD) Microplasmas for Elemental, Isotopic, and Molecular Determinations	Clemson University	Richard Marcus	1
12:05 - 12:10	5	Q/A and Computer Feedback			
12:10 - 1:40	90	~ Lunch ~			
1:40 - 2:00	20	Field Detection and Quantification of Inorganic Species from Surfaces	Washington State University	Brian Clowers	1
2:00 - 2:05	5	Q/A and Computer Feedback			
2:05 - 2:25	20	Electroanalytical Method Development to Support Post-Detonation Debris Analysis	Washington State University	Sue Clark (Neil Ivory &	1
2:25 - 2:30	5	Q/A and Computer Feedback			
2:30 - 2:50	20	Evaluation of Novel Inorganic Salt Fusions and Sonication to Dissolve Refractory Nuclear Debris	University of Missouri, Columbia	John Brockman	1
2:50 - 2:55	5	Q/A and Computer Feedback			
2:55 - 3:10	15	~ Break ~			
3:10 - 3:30	20	Post-Detonation Behavior of Radiological Debris	Oak Ridge National Laboratory	Costas Tsouris	1
3:30 - 3:35	5	Q/A and Computer Feedback			
3:35 - 3:55	20	Resonance Ionization Mass Spectrometry for Post-Detonation Nuclear Forensics	Naval Postgraduate School	Craig Smith	1
3:55 - 4:00	5	Q/A and Computer Feedback			
4:00 - 4:20	20	Characterization of Particles formed via Laser-Driven Hydrothermal Processing	Naval Postgraduate School	Sarath Menon	1
4:20 - 4:25	5	Q/A and Computer Feedback			
4:25 - 4:45	20	A Holistic Approach to Post-Detonation Radiological Debris Analysis	Draper Lab	Theresa Evans-Nguyen	1
4:45 - 4:50	5	Q/A and Computer Feedback			

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Wednesday July 20, 2016					w1a
Start - End	dt	Title	Institution	Presenter	TA
8:45 - 9:10	25	Daily Instructions and Computer Intro	DTRA / JHU		
9:10 - 9:15	5	Intro to Securing Weapons, Facilities, & Weapon-Usable Materials	DTRA	Calvin Shipbaugh	
9:15 - 9:35	20	Luminescent Core-Shell Nanostructures as Radiation Indicators	University of Texas, Pan American	Yuanbing Mao	5
9:35 - 9:40	5	Q/A and Computer Feedback			
9:40 - 10:00	20	Inversion of the Electrical and Optical Properties of Hexagonal Boron Nitride by Acoustic Waves	University of Texas, Austin	Deji Akinwande	5
10:00 - 10:05	5	Q/A and Computer Feedback			
10:05 - 10:25	20	SecureMEMS: Fundamental Research in MEMS/Energetic Material Integration	Purdue University	Jeffrey Rhoads	5
10:25 - 10:30	5	Q/A and Computer Feedback			
10:30 - 10:50	20	Basic Studies on New Stimuli-Responsive Shape Memory Polymers for Securing WMD	University of Florida	Jiang Peng	5
10:50 - 10:55	5	Q/A and Computer Feedback			
10:55 - 11:00	5	Program Execution and Funding Expenditures Brief	DTRA	LT Col Rupanovic	
11:00 - 11:15	15	~ Break ~			
11:15 - 11:35	20	Switchable Surface Instabilities for Controlled Permeation and Sensing	University of Massachusetts	Ryan Hayward	5
11:35 - 11:40	5	Q/A and Computer Feedback			
11:40 - 12:00	20	Pseudo-Continuum Source Volume Isotope Effect Absorption Spectra for Fieldable Measurement of Uranium and Plutonium Enrichment	Arkansas State University	Jonathan Merten	5
12:00 - 12:05	5	Q/A and Computer Feedback			
12:05 - 12:25	20	Tamper-Induced Phase Transitions in Protective Materials for WMD-Related Sensing and Monitoring	Air Force Institute of Technology	Alex Li	5
12:25 - 12:30	5	Q/A and Computer Feedback			
12:30 - 2:00	90	~ Lunch ~			
2:00 - 2:05	5	Intro to Novel X-ray Sources	DTRA	Calvin Shipbaugh	
2:05 - 2:25	20	Wave Compression in High Energy Density Matter: Building Swtiches in Dense Plasmas	Princeton University	Nathaniel Fisch	3
2:25 - 2:30	5	Q/A and Computer Feedback			
2:30 - 2:50	20	Laser-Generated X-rays in an Under-Dense Plasma Produced in a High-Density Linear Gas Jet	University of Nevada, Reno	Victor Kantsyrev	3
2:50 - 2:55	5	Q/A and Computer Feedback			
2:55 - 6:00		Poster Session			

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Thursday July 21, 2016					w1a
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 Point Detectors	DTRA	Dave Petersen	
8:30 - 8:50	20	Suppression of Interface-induced Noise by the Control of Electron-Phonon Interactions	University of Michigan	Mark Hammig	1
8:50 - 8:55	5	Q/A and Computer Feedback			
8:55 - 9:15	20	High Efficiency Low-cost Nanocomposite for Radiation Detection Enabled by Charge Triggered Secondary Charge Injection	University of Nebraska	Jinsong Huang	1
9:15 - 9:20	5	Q/A and Computer Feedback			
9:20 - 9:40	20	High-Z Fluoride Phosphorescent Nanocomposites for Gamma Scintillation	University of California, Los Angeles	Qibing Pei	1
9:40 - 9:45	5	Q/A and Computer Feedback			
9:45 - 9:50	5	Program Execution and Funding Expenditures Brief	DTRA	LT Col Rupanovic	
9:50 - 10:05	15	~ Break ~			
10:05 - 10:25	20	Nanostructured III-V Detectors for High Resolution WMD Sensing at 300 K	University of California, Los Angeles	Diana Huffaker	1
10:25 - 10:30	5	Q/A and Computer Feedback			
10:30 - 10:50	20	Improving Novel Boron Carbide Polymers for Enhanced Neutron Detection	University of North Texas	Jeffry Kelber	1
10:50 - 10:55	5	Q/A and Computer Feedback			
10:55 - 11:15	20	Realizing Thick-Film Boron Carbide Direct-Conversion Neutron Detectors	University of Missouri, Kansas City	Michelle Paquette	1
11:15 - 11:20	5	Q/A and Computer Feedback			
11:20 - 11:40	20	Urania-Based Direct Conversion Neutron Detectors	University of Tennessee	Tom Meek	1
11:40 - 11:45	5	Q/A and Computer Feedback			
11:45 - 1:15	90	~ Lunch ~			
1:15 - 1:35	20	Plasmon-Enhanced Inverted Organic Bulk Heterojunction UV Photodetectors	University of Washington	Qiuming Yu	1
1:35 - 1:40	5	Q/A and Computer Feedback			
1:40 - 2:00	20	Solution Processable Wide Band Gap Perovskites for Photodetectors	University of California, Santa Barbara	Michael Chabinyc	1
2:00 - 2:05	5	Q/A and Computer Feedback			
2:05 - 2:10	5	Intro to Monitoring and Verification	DTRA	Calvin Shipbaugh	
2:10 - 2:30	20	Bayesian Treaty Monitoring	University of California, Berkeley	Stuart Russell (Dave Moore)	5
2:30 - 2:35	5	Q/A and Computer Feedback			
2:35 - 2:55	20	Investigation of Data-Intensive Discovery Methods for Improved Seismic Monitoring	Columbia University	Paul Richards	5
2:55 - 3:00	5	Q/A and Computer Feedback			
3:00 - 3:15	15	~ Break ~			
3:15 - 3:35	20	The Potential for Decoupling Explosions in Fractured Hard Rock: Examples from Kazakhstan Historical Data and a New Field Study	Weston Geophysical Corporation	Anastasia Stroujkova	5
3:35 - 3:40	5	Q/A and Computer Feedback			
3:40 - 4:00	20	Radionuclide Signatures	University of Texas, Austin	Steven Biegalski	5
4:00 - 4:05	5	Q/A and Computer Feedback			
4:05 - 4:25	20	Ultra-Trace-Level Quantification of Alpha- and Beta-Emitting Radionuclides with Extractive Scintillating Resin	Clemson University	Tim Devol (Scott Husson)	5
4:25 - 4:30	5	Q/A and Computer Feedback			
4:30 - 4:50	20	OSI Science	University of Texas, Austin	Steven Biegalski	5
4:50 - 4:55	5	Q/A and Computer Feedback			

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Friday July 22, 2016					w1a
Start - End	dt	Title	Institution	Presenter	TA
8:30 - 8:55	25	Daily Instructions and Computer Intro	DTRA / JHU		
8:55 - 9:00	5	Continue Monitoring and Verification	DTRA	Calvin Shipbaugh	
9:00 - 9:20	20	Fast Ultra-Trace Detection of Fission Product Relative Isotopic Abundances	Washington State University	Nathalie Wall (P. Reilly)	5
9:20 - 9:25	5	Q/A and Computer Feedback			
9:25 - 9:45	20	Ultrafast Fiber Laser Sampling and Plasma-Enhanced Laser Induced Breakdown Spectroscopy to Combat WMD	University of Pittsburgh	Peng Chen	5
9:45 - 9:50	5	Q/A and Computer Feedback			
9:50 - 10:10	20	Nuclear Isotopic Detection via Enhanced LIBS	Alakai Defense Systems, Inc.	Alan Ford	5
10:10 - 10:15	5	Q/A and Computer Feedback			
10:15 - 10:30	15	~ Break ~			
10:30 - 10:35	5	Program Execution and Funding Expenditures Brief	DTRA	LT Col Rupanovic	
10:35 - 10:55	20	Mathematical Representation of Isotopic Gas Migration from an Underground Nuclear Weapon Test through Rocks	Los Alamos National Laboratory	Dale Anderson	5
10:55 - 11:00	5	Q/A and Computer Feedback			
11:00 - 11:20	20	Vibration Spectrometer for Detecting Single Atoms Using Carbon Nanotube Resonator Arrays	U.S. Air Force Academy	Yalin Lu	5
11:20 - 11:25	5	Q/A and Computer Feedback			