



Awareness and Localization of Explosives-Related Threats (ALERT)

A Department of Homeland Security Center of Excellence

Algorithm Development for Security Applications (ADSA) Workshop 09: New Methods for Explosive Detection for Aviation Security

October 22-23, 2013
Northeastern University, Boston, MA

AGENDA

Workshop Location: Room 378, 140 The Fenway Building, Northeastern University

*Reception, Poster Session, ALERT Phase 2 Ceremony and Dinner Location:
Ballroom, Curry Student Center, Northeastern University

October 22, 2013 – Day 1

Time	Topic	Speaker	Affiliation
8:00 AM	Registration/Continental Breakfast		
8:30 AM	Welcome – ALERT	Michael Silevitch	ALERT / Northeastern University
8:35 AM	Welcome – DHS	Laura Parker	Department of Homeland Security
8:40 AM	DHS Centers of Excellence E2E Program	Matt Clark	Department of Homeland Security
8:45 AM	Workshop Objectives	Carl Crawford	Csuptwo
X-Ray Transmission			
9:05 AM	Photon Counting CT - Potential Advantages Over Dual Energy	Taly Gilat-Schmidt	Marquette University
9:30 AM	Rapid Colour Tomographic Imaging	Robert Cernick	University of Manchester
9:55 AM	Break		
10:20 AM	Multi-Energy X-Ray Detectors	Patrick Radisson	Multix Detection
10:45 AM	System-Independent X-Ray Characterization of Materials	Steve Azevedo	Lawrence Livermore National Laboratory
10:55 AM	PFA Predictions	Richard Bijjani	Robehr Analytics
Cargo, Bulk and Other Methods			
11:20 AM	Explosives Detection at LANL Based on Novel Magnetic Resonance Methods	Larry Schultz	Los Alamos National Laboratory
11:45 AM	Lunch		
12:30 PM	Background Cosmic Ray Produced Charged Particles for the Detection of Bulk Drugs and Other Contraband	Michael Sossong	Decision Sciences International Corporation
12:55 PM	Bottle Scanner Technologies	Ben Cantwell	Kromek
1:20 PM	Multi-Spectral 3D Reconstruction and Data Fusion for Contraband Detection in Cargo Containers	Steve Korbly	Passport Systems
1:45 PM	A Major Advance in the State-of-the Art in Optical Remote Sensing of Trace Compounds	Arsen Hajian	Tornado Spectral Systems



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Time	Topic	Speaker	Affiliation
Explosive Trace Detection (ETD)			
2:10 PM	Addressing Issues with Sample Collection	Jimmie Oxley	University of Rhode Island
2:35 PM	An Engineering Basis for Improved Swab Technology	Stephen Beaudoin	Purdue University
3:00 PM	Trace in Situ Explosives Analysis Using a Miniature Mass Spectrometer	Ryan Espy	Purdue University
3:25 PM	An IMS with a Resolution of 1,000 and Parts Per Trillion Sensitivity for Ambient Vapors	Jerry Schmitt	Nano Engineering Corporation
3:50 PM	Adjourn to Curry Student Center Ballroom		
Reception, Student Posters, Dinner, Dinner Speakers*			
4:00 PM	ALERT Student Poster Session / Reception <i>Sponsored by Csuptwo</i>	Students / Carl Crawford	ALERT / Csuptwo
Ceremony to Launch ALERT Phase 2* 5:00 PM – 5:45 PM			
5:00 PM	Moderator <i>Michael B. Silevitch, ALERT Director, Robert D. Black Professor of Engineering, Northeastern University</i>		
	Invited Speakers <i>Joseph E. Aoun, President of Northeastern University</i> <i>Daniel M. Gerstein, Deputy Under Secretary for Science and Technology, Department of Homeland Security</i> <i>Matthew Clark, Director, Office of University Programs, Science and Technology Directorate, Department of Homeland Security</i> <i>Stephen W. Director, Provost and Senior Vice President of Academic Affairs, Northeastern University</i> <i>Richard O. Buckius, Vice President for Research, Purdue University (letter to be read in his absence)</i> <i>Gerald Sonnenfeld, Vice President for Research and Economic Development, University of Rhode Island</i> <i>Gloria S. Waters, Vice President and Associate Provost for Research, Boston University</i>		
6:00 PM	Dinner		
6:50 PM	Detection of Ambient Explosive Vapors at Concentrations Below Parts Per Quadrillion	Juan Fernandez de la Mora	Yale University
7:15 PM	Adjourn Carl Crawford Csuptwo		



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October 23, 2013 – Day 2

Time	Topic	Speaker	Affiliation
7:30 AM	Continental breakfast		
8:00 AM	Call to Order	Carl Crawford	Csuptwo
8:05 AM	ADSA10 Topics	Carl Crawford	Csuptwo
AIT (Body Scanning)			
8:10 AM	Challenges and Opportunities for Improved Mm-Wave Whole Body AIT Threat Discrimination	Carey Rappaport	Northeastern University
8:35 AM	GPU Accelerated Ray Tracer for Simulating a Portal Based Security System	Kate Williams	Northeastern University
Technology Transition			
9:00 AM	Hurdles to the Adoption of New Methods	Matthew Merzbacher	Morpho Detection
9:15 AM	What's the Problem with Neutrons for Explosive Detection?	Harry Martz	Lawrence Livermore National Laboratory
9:30 AM	Apples to Apples Discussion of Emerging Technologies	George Zarur	Self
9:45 AM	Where Does Video Analytics Go Next for TSA	Octavia Camps	Northeastern University
10:00 AM	Break		
10:25 AM	Iterative Reconstruction with Vendor Participation	Charles Bouman	Purdue University Notre Dame University
10:40 AM	DNDO Algorithmic Needs and University Engagements	Timothy P. Ashenfelter	Department of Homeland Security Domestic Nuclear Detection Office
X-Ray Diffraction, Phase Contrast & Scatter			
10:55 AM	Algorithms and Architectures for X-ray Diffraction Tomography	David Castañón	Boston University
11:20 AM	Coding and Sampling for X-ray Molecular Imaging	David Brady	Duke University
11:45 AM	Detection with Spectral X-Ray Detectors and the Complimentary Method of X-Ray Diffraction	Ed Morton	Rapiscan



Time	Topic	Speaker	Affiliation
12:10 PM	Lunch		
12:55 PM	The Application of Scatter Attenuation Tomography (SAT) for Explosives Detection	Peter Rothschild	American Science and Engineering
1:20 PM	Gratings-Based Phase Contrast X-Ray Imaging for Improved Material Discrimination	Erin Miller	Pacific Northwest National Laboratory
1:45 PM	Novel Differential Phase Contrast 3-D X-Ray Imaging for Aviation Security Applications	Bert Hesselink	Stanford University
2:10 PM	Break		
Miscellaneous			
2:35 PM	Vigilance decrement: When does it happen and what might be done	Matthew Cain	Harvard Medical School
3:00 PM	Missed technologies	Tim White	Pacific Northwest National Laboratory
Wrap Up			
3:25 PM	Next steps	Harry Martz	Lawrence Livermore National Laboratory
3:50 PM	Closing remarks - DHS	Laura Parker	Department of Homeland Security
3:55 PM	Closing remarks - ALERT	Michael Silevitch	Northeastern University / ALERT
4:00 PM	Adjourn	Carl Crawford	Csuptwo