



Awareness and Localization of Explosives-Related Threats (ALERT)

*ALERT is supported by the Department of Homeland Security (DHS) Science and Technology (S&T) Directorate through the Office of University Programs (OUP)*

**Advanced Development for Security Applications (ADSA) Workshop 19:  
Rapid Response to an Adapting Adversary**

October 16-17, 2018

17th Floor Event Space, East Village  
(291 Saint Botolph Street, Boston, MA 02115)  
Northeastern University, Boston, MA

# AGENDA

## Tuesday, October 16, 2018 - Day 1

Time	Topic	Speaker	Affiliation
7:30 AM	<b>Check-in/Breakfast</b>		
8:30 AM	<b>Introductions</b>		
8:30 AM	Welcoming Remarks - ALERT	Michael Silevitch	Northeastern University / ALERT - Director
8:35 AM	Welcoming Remarks	Nadine Aubry	Northeastern University - Dean of the College of Engineering
8:40 AM	Welcoming Remarks	Laura Parker	Department of Homeland Security - Program Manager
8:45 AM	Setting the Stage	Carl Crawford	Csuptwo - President
8:55 AM	<b>TSA Perspectives and Initiatives - Panel Discussion</b>		
8:55 AM	Introduction	Austin Gould	Transportation Security Administration - Assistant Administrator for Requirements and Capabilities Analysis
9:10 AM	Checkpoint CT Update	Armen Sahagian	Transportation Security Administration - Senior Program Manager
9:20 AM	Machine Learning with a Focus on Prohibited Items	Frank Cartwright	Transportation Security Administration - Systems Engineering Branch Manager
9:30 AM	Innovation Task Force (ITF): Metrics, Risk Based Screening and Automated Screening Lanes	Matt Gilkenson	Transportation Security Administration
9:40 AM	Biometrics Update	Austin Gould Matt Gilkenson	Transportation Security Administration

<b>Time</b>	<b>Topic</b>	<b>Speaker</b>	<b>Affiliation</b>
9:50 AM	Air Cargo Update	Alan Collier	Transportation Security Administration - Branch Manager, Air Cargo Requirements
10:00 AM	<b>Break</b>		
10:25 AM	<b>DoD Perspectives</b>		
10:25 AM	DoD Lessons	Lt. Col. Steve Webber	USAF, Nuclear Detection Division - Deputy, Nuclear Detection Division
10:55 AM	<b>Advanced Technology - I</b>		
10:55 AM	Dual-energy CT with Nanotube X-ray Source Array for Security Scanning	Xiaochuan Pan	University of Chicago - Professor, Department of Radiology
11:20 AM	Creation of Simulated Medical Images Using AI	Hojjat Salehinejad (video link)	University of Toronto
11:45 AM	The DICOS Interoperability Standard: What is it? Why is it important? Why do vendors support it?	Steve Urchuk	Analogic - VP Systems Engineering and Advanced Detection
12:05 PM	<b>Lunch</b>		
1:05 PM	<b>Video Analytics</b>		
1:05 PM	Video Tracking of Passengers and Divested Objects at a Checkpoint	Henry Medeiros	Marquette University - Assistant Professor, Electrical and Computer Engineering
1:40 PM	<b>Perspectives: Airports and Humans</b>		
2:15 PM	Terrorism in an Islamic Costume - Perspectives from a Former Supporter	Mubin Shaikh	Self
3:00 PM	Why and How Terrorists Change Tactics	Ronald Schouten	Harvard Medical School - Associate Professor of Psychiatry
3:30 PM	<b>Break</b>		
3:55 PM	Transformation of the Checkpoint	Jeffrey Barrow	Airports Council International (ACI) World - Manager Smart Security
4:15 PM	Human Performance Initiatives	Bonnie Kudrick	Transportation Security Administration - Branch Manager & Engineering Psychologist
4:40 PM	<b>Threat Characterization</b>		
4:40 PM	How Terrorists are Adapting?	Jimmie Oxley	University of Rhode Island - Professor
5:05 PM	Characterization of New Threats and the Application of Explosive Simulants	Larry McMichael	Lawrence Livermore National Laboratory - Associate Program Leader
5:30 PM	<b>Trace Detection</b>		
5:30 PM	Adaptive Trace Detection	David Atkinson	Pacific Northwest National - Chief Scientist for Explosives Detection research Laboratory
5:50 PM	ALERT Membership	Kristy Provinzano	Northeastern University / ALERT - Industrv Liaisons
6:00 PM	<b>Adjourn</b>	Emel Bulat Carl Crawford	Csuptwo - President



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# AGENDA

## Wednesday, October 17, 2018 - Day 2

Time	Topic	Speaker	Affiliation
7:30 AM	<b>Check-in/Breakfast</b>		
8:00 AM	Call to Order	Carl Crawford	Csuptwo - President
8:05 AM	<b>Advanced Technology - II</b>		
8:05 AM	Vision Guided, Hyperspectral Imaging for Standoff Trace Chemical Detection	Eric Miller	Tufts University - Professor and Chair, Electrical & Computer Engineering
8:25 AM	Cutting Edge MS Based Techniques to Detect Explosives	Jani Hakala	Karsa Oy
8:45 AM	Photon Counting Toolkit	Ken Taguchi	The Johns Hopkins University School of Medicine - Associate Professor, Radiology
9:05 AM	Towards In-baggage Suspicious Object Detection Using Commodity WiFi	Jennifer Chen	Rutgers University - Professor, Electrical & Computer Engineering
9:30 AM	White box Testing of Deep Learning Systems	John Tatarowicz Brett Brillhart	Transportation Security Laboratory / Battelle Memorial Institute - Research Scientists
9:50 AM	<b>Break</b>		
10:15 AM	Comparison of AATR Scoring Metrics based on Image Similarity versus Object Overlap	David Paglieroni	Lawrence Livermore National Laboratory - Technical Staff Lead, Engineering Directorate

<b>Time</b>	<b>Topic</b>	<b>Speaker</b>	<b>Affiliation</b>
10:35 AM	Material Identification and Classification using Machine Learning Techniques with Hyperspectral Computed Tomography	Srivathsan Koundinyan	Sandia National Laboratory - Senior R&D Computer Scientist
10:50 AM	<b>DHS Kaggle Competition for ATR for MMW AIT</b>		
10:50 AM	Introduction	John Fortune	Department of Homeland Security - Apex Screening at Speed Program Manager
11:05 AM	DHS/Kaggle Passenger Screening Algorithm Challenge	Zachary Teed	University of Michigan - Graduate Student
11:20 AM	DHS/Kaggle Passenger Screening Algorithm Challenge	Halla Yang	Self - Analyst
11:35 AM	DHS/Kaggle Passenger Screening Algorithm Challenge	David Odaibo	Self - Machine Learning Data Scientists
11:50 AM	DHS/Kaggle Passenger Screening Algorithm Challenge	Jeremy Walthers	Self - Data Scientist
12:05 PM	<b>Lunch</b>		
1:05 PM	<b>Adaptive ATR (AATR)</b>		
1:05 PM	AATR for CT Based Systems	David Castanon	Boston University - Professor, Electrical & Computer Engineering
1:40 PM	Vendor Response to AATR	Matthew Merzbacher	Smiths Detection - Director of Certification & Qualification
1:55 PM	Vendor Response to AATR	Omar AlKofahi	Integrated Defense and Security Solutions (IDSS) - Director, Algorithms
2:10 PM	<b>Other Methods</b>		
2:10 PM	Improving Field Detection Performance	Matthew Merzbacher	Smiths Detection - Director of Certification & Qualification
2:30 PM	Evaluating Biometric Performance	Jordan Cheney	Noblis
2:50 PM	Metal Artifact Reduction Using AI	Clem Karl	Boston University - ECE Department Chair & Professor
3:05 PM	Intelligent Building Response – Detection Systems	Michael Birnkrant	United Technologies Research Center - Sr.Technical Contributor
3:25 PM	<b>Next Steps</b>		
3:25 PM	Summary and Next steps	Larry McMichael	Lawrence Livermore National Laboratory - Associate Program Leader
		Carl Crawford	Csuptwo - President
		Suriyun Whitehead	Booz Allen Hamilton - Lead Associate
3:50 PM	<b>Closing Remarks</b>		
3:50 PM	Closing Remarks	Michael Silevitch	Northeastern University /ALERT - Director
3:55 PM	Closing Remarks	Laura Parker	Department of Homeland Security - Program Manager
4:00 PM	<b>Adjourn</b>	Carl Crawford	Csuptwo - President