Critical Infrastructure Protection

Adaptive Network Countermeasures: A Dynamic System for Deception and Network Protection
Jamie Van Randwyk, Sandia National Laboratories

Addressing the Insider Threat from Unauthorized Area Networks
Eamon Doherty, Farleigh Dickinson University

An Advanced Risk Modeling System (ARMS) for Critical Infrastructure
Edward V. Badolato, The Shaw Group

Anticipatory Theory-based Information Processing Framework for a Wireless Sensor Network to Assure the Nation’s Critical Energy Infrastructure
Teja Kuruganti, Oak Ridge National Laboratory

Application of Advanced Technologies for Early Warning and Decision Making for Threat and Vulnerability Assessment
David B. Keever, SAIC

Application of Video Technologies and Patterns Recognition in Safeguards
Ajay Jain, Excom Inc.

Audio-Visual Communication-Monitoring System for Enhanced Situational Awareness
Durand Begault, NASA Ames Research Center

Authenticating Video Surveillance Systems Using Watermarked Video Objectives
Petar Horvatic, IMEDIA

Automation of Scene Understanding for the U.S. Coast Guard Hawkeye Port and Coastal Surveillance System
David Armstrong, U.S. Coast Guard Research and Development Center

Building a National Emergency Computing Network
Gregory Newby, Arctic Region Supercomputing Center

Cost Model for Building Protection
Charles Call, MesoSystems

Critical Infrastructure Assessments and Testing Standards, Methods and Practices
Rob Hoffman, Idaho National Laboratory

Critical Infrastructure Protection Leveraging Air Platform and Sensor Technologies at the Johns Hopkins University Applied Physics Laboratory
Surjit Badesha, Johns Hopkins University Applied Physics Laboratory

**Critical Transportation Infrastructure Monitoring, Assessment and Protection**
Bill Roper, George Mason University

**The Cyber Defense Technology Experimental Research Network**
Terry Benzel, University of Southern California

Cyber Situational Awareness Toolkit
Paul O’Rourke, Lucent Technologies

**Cyber Threat-Source Taxonomy – A Common Expression for Wide-Spread Concerns**
Gary R. Stoneburner, Johns Hopkins University Applied Physics Laboratory

**A Data Model and Architecture for Critical Infrastructure Protection**
Anoop Singhal, George Mason University

**Decision Technologies for the Protection of Critical Infrastructure**
William Wallace, Rensselaer Polytechnic Institute

**Defending Against Internet Host Fingerprinting – Towards an Outermost Barrier of Cyberspace Security**
G. Q. Shu

**Design Optimization of Logistics and Information Networks**
Ananth Krishnamurthy, Rensselaer Polytechnic Institute

**Design and Performance Considerations for Emergency Water Treatment Units**
John Whitler, US EPA and Gene Fax, The Cadmus Group

**A Design for a Secure Sensor-Communications Network**
Nirmala Shenoy, Jon Schull and Cao Xiaojun, Rochester Institute of Technology

**Designing Infrastructure for New Goals and Constraints**
Gordon Thompson, Clark University

**Developing a Comprehensive Intrusion Detection Strategy for Critical Infrastructure Protection**
Rob Hoffman, Idaho National Laboratory

Development of an Autonomous Lidar Instrument for Use on a UAV Platform in Support of Homeland Security
Matthew McGill, NASA-Goddard Space Flight Center

**Development of the Inter-Agency Modeling and Atmospheric Assessment Center**
Gayle Sugiyama, Lawrence Livermore National Laboratory

**Development of Low Energy Integrated CMOS Circuits and Systems for Distributed Sensor Networks**
Sameer Sonkusale, Tufts University

**Diagnostic Tools to Estimate Consequences of Terrorism Attacks Against Critical Infrastructure**
Rae Zimmerman and Carlos Restrepo, New York University

**Dynamic Integration and Use of Distributed and Heterogeneous Databases**
Wayne Bethea, Johns Hopkins University Applied Physics Laboratory

Dynamic Surveillance and Detection by Optimized Self-Configuring Sensor Networks
Humberto E. Garcia, Idaho National Laboratory

**EGAD: A Unique Anomaly Detection Framework for Protecting Critical Infrastructure Against Cyber Attacks**
Robert Ross, BAE Systems

**The Effectiveness of Generative Attacks on a Handwriting Biometrics**
Dan Lopresti, Lehigh University
Embedded System Security
Wayne Burleson, University of Massachusetts Amherst

Emergency Operations Center Design to Support Rapid Response and Recovery
Laura Militello, University of Dayton Research Institute

Emergency Responder Intelligent Interaction Environment
Michael Orr, Lockheed Martin

Enterprise Architectures for Container Security
Soon Ae Chun, Rutgers University

Evacuating Large Cities and Buildings Efficiently
Costas Busch, Rensselaer Polytechnic Institute

Evaluating the Security of the North American Power Grid
Bernard Lesieutre, Lawrence Berkeley National Laboratory

Harnessing Wireless Telephony to Enhance Homeland Security
Carol McDonough, University of Massachusetts Lowell

Have You Really Erased Your Sensitive Files? Magnetic Fingerprinting and Information Storage
Kai Liu, University of California – Davis

A High Data Rate, Adaptable Wireless Architecture for Sensor Systems
William P. D’Amico, Johns Hopkins University Applied Physics Laboratory
Nada Golmie, NIST

Implementation of Long-life Sensor Networks for Environmental Monitoring for Bio-chemical Defense
Na Wang, Tufts University

The Importance of the X.805 Security Framework: Securing the Electric Utilities Control and Data Network
Uma Chandrashekhar, Bell Labs

Improving the Security of Water Distribution Systems Using a Co-evolutionary Approach
Tomasz Arciszewski, George Mason University

Infrared CARS: A Novel Sensor for Chemical, Biological and Nuclear Detection
Roger K. Richards, Oak Ridge National Laboratory

Innovative Model for Simplifying Information Security Risk Analysis
Sanjay Goel, State University of New York at Albany

Interactive Simulation Tools for Urban Threat Assessment and Training
Curtis Lisle, Silicon Graphics

Maintaining Situational Awareness with Autonomous Airborne Observation Platforms
Michael Freed, NASA Ames Research Center

MEMS Sensors for the Detection of Hazardous Conditions and Material Under Critical Scenarios
Paul Greenberg, NASA Glenn Research Center

A Model for Exploratory Data Analysis
K. M. George, Oklahoma State University

Monitoring Message Streams
Paul Kantor, Rutgers University

Multi-hop Positioning and Risk-tolerant Robust Wireless Sensor Networks
Liang Cheng, Lehigh University

A Multi-level Secure Network Infosec System Resistant to Insider Intrusion Providing Retroactive Denial of Data
Multispectral Sensing for High-Performance Fingerprint Biometric Imaging
Matthew Ennis, Lumidigm, Inc.

Network Applications of Polarization-based Intrusion Detection Systems
Pramode Verma, University of Oklahoma – Tulsa

Network, Architecture and Protocols for National Critical Infrastructure Protection
Z. J. Liu, The Ohio State University

Network Extrusion Prevention: Addressing Insider Threats

A New Broadcast Cryptography Scheme with Applications to Secure and Authenticate DTV Broadcasting for Emergency Alert
B. Vishal, The Ohio State University

Next Generation of Fingerprint Sensors
Geppy Parziale, TBS North America, Inc.

A Novel Architecture for Next Generation Wireless Communications Systems
Patrick E. White, Stevens Institute of Technology

Optimization of Distributed Security Sensor Systems
George Markowsky, University of Maine

Optimum Data Objects for Secure Software
Ed Lowry, Advanced Information Microstructures

Physics-based Methods for Bulk Currency Detection
Timothy J. Roney, Idaho National Laboratory

A Plan for SCADA Security Employing Best Practices and Client Puzzles to Deter Denial of Service Attacks
Calvert L. Bowen, III and Ryan W. Thomas, Virginia Tech

A Pre-hospital Patient Care System with Wireless Sensors for Vital Sign Monitoring and Patient Location Tracking
Steve Moulton, Boston University

Proactive Security: From Evolutionary Approaches to Cellular Automata
Rafal Kicinger, George Mason University

Protection of Hazardous Chemicals During Transport in Bulk
Venkat Devarakonda, BlazeTech Corp.

Radio-Frequency Identification Surveillance and Privacy: The Sorting Door Project
Ross Stapleton-Gray, Skaion Corporation

A Real-time, Small Footprint Microwave Imaging System Based on a Planar RF Lens
Zachi Baharav, Agilent Technologies

Relational Database Modeling to Manage Distributed Sensors for Perimeter Security
Robert Fricke, TIAx LLC

Reducing Risk Posed by Hazardous Materials Shipments Sub-Atmospheric Pressure Storage and Delivery for Hazardous Gas
Peter Van Buskirk, ATMI, Inc.

Road to the Blinky Lights – Anatomy of a SCADA Attack
Rob Hoffman, Idaho National Laboratory
SCADA System Vulnerability Analysis
Kelvin T. Erickson, University of Missouri-Rolla

Secure Internetworking Video Surveillance for DHS Protection Mission
Alex Zhaoyu Liu, University of North Carolina at Charlotte

Security of Transportation Systems: An Evolutionary Approach
Tomasz Arciszewski, George Mason University

Shipping Container Bio-Chem Inspection: A New Technology $10 Solution
Stephen Leibholz, TechLabs.

Simulation and Modeling Capabilities for Waterway and Port Security
Dinah McComas, US Army Engineer Research and Development Center

A Single Engine Approach in Face-Fingerprint Biometrics
Andrzej Rucinski, University of New Hampshire

Smart Sensor Interface Standards for Homeland Security Applications
Kang Lee, NIST

Space-Based Technologies for Tank Leakage Detection
Vitaliy Firsov, Yuzhnoye SDO

Standardized Interfaces and Web Enablement for Sensor Networks
Kang Lee, NIST

Structural Health Monitoring of Critical Transportation and Civil Infrastructure
Mike Masquelier, Motorola Labs

Synthetic Environment for Measured Response Against High-Consequence Terrorist Events
Tejas Bhatt, Purdue Homeland Security Institute

Team Situation Awareness: Display Technologies in Support of Maritime Domain Awareness
Clint Jenkin, U.S. Coast Guard RDC and University of New Hampshire

Terrorism Risk Analyst Workbench
Michael Orosz, University of Southern California

Traffic Generation and Simulation in Cyber Security Research
Sam Gorton, Skaion Corporation

The Transition of Military Technology for Law Enforcement
Tom Marenic, Dolphin Technology, Inc.

Transportation System Security Readiness Assessment System
Rekha Pillai, Oak Ridge National Laboratory

Ultra Low Power Photomultiplier Tube Circuit for Continuous Monitoring of High Energy Particles or Fluorescence Events
Paul Dentinger, Sandia National Laboratories

Use of Biometric and Motion Sensors in Personal Location Tracking Technologies for Optimizing Recovery Operations
Charles Swope and John Preston, Motorola

Use of Terrorism Catastrophe Risk Modeling to Manage Terrorism Exposure in the Insurance Industry
Jack Seaquist, AIR Worldwide Corporation

Dan Kroll, Senior Scientist, Hach HST