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)

ALERT Technology Showcase
Virtual Workshop

April 21- 22, 1 PM - 4 PM ET

SPEAKER BIOGRAPHIES

Gregory Abowd

Northeastern University

Gregory Abowd is Dean of the College of Engineering and Professor of Electrical and Computer Engineering at Northeastern University. Prior to joining Northeastern, he spent over 26 years on the faculty at Georgia Tech, where held the position of Regents' Professor and the J.Z. Liang Chair in the School of Interactive Computing. He was also Associate Dean for Research in the College of Computing. He is an elected member of the ACM SIGCHI CHI Academy and an ACM Fellow. His research falls largely in the area of Human-Computer Interaction with an emphasis on applications and technology development for mobile and ubiquitous computing in everyday settings. He has over 300 peer-reviewed publications, an h-index of 87 (according to Google Scholar) and holds several issued patents, assisting in the formation of 6 commercialization efforts, several of which are still active and profitable. He has graduated 30 PhD students who have gone on to faculty careers at Michigan State, Carnegie Mellon, University of Toronto, University of Washington, University of California at Irvine, North Carolina-Charlotte, Georgia Tech, Georgia Gwinnett College, KTH in Sweden, University of Kuwait, University of Minnesota, UNIST in Korea, the University of Texas at Austin, IIIT Delhi, and Cornell as well as various research and consulting positions in government and industry, including NSA, McKinsey, LinkedIn, Samsung, Hewlett-Packard, Amazon, Delta Electronics, AT&T Research, The North (formerly Thalmic Labs), Intel Research, and Apple Research. He has mentored numerous undergrads and masters students who have gone on to significant commercial and research careers as well.

Stephen P. Beaudoin

Purdue University

Stephen P. Beaudoin is a Professor in the School of Chemical Engineering at Purdue University, where he also serves as the Director of the Purdue Energetics Research Center (PERC), a multidisciplinary research center that supports research across the DoD, DOE, and DHS. Beaudoin has published more than 100 articles in the refereed literature, with a focus on particle and powder adhesion in energetic materials engineering, detection and processing; and in microelectronics, food, and pharmaceutical manufacturing. He serves as the Leader of the Trace and Vapor Sensors Research Thrust in ALERT (Awareness and Localization of Explosives-Related Threats), a U.S. Department of Homeland Security-sponsored Center of Excellence in Explosives Research. He also serves as Academic Director of the Dual MS in Defense Engineering and Technology degree program, which is jointly offered by Purdue and Cranfield University (UK).

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Deanna Beirne

Northeastern University

Ms. Beirne serves as the Senior Director of Research Computing and Technology Program Development at ALERT, Northeastern University. In this role she leads the ALERT Computer Services Team; oversees technology and computational needs of the center research environment; and facilitates the delivery of developed technologies to market. She is program manager for center Task Orders and industrial contracts dealing with video analytics, CT cargo scanning, AIT material characterization, and enhanced trace explosives detection. She has over 25 years' experience in Computing and Information Technology beginning with providing customer service support and implementing technology rollouts at the University of Vermont; serving as computer systems manager and web developer for various arts organizations in both Vermont and Massachusetts; followed by her transition to Northeastern University supporting the NSF Engineering Research Center, Bernard M. Gordon Center for Subsurface Sensing and Imaging Systems as Computer System Manager and Web Developer. Ms. Beirne is ITIL certified and also serves as an active member of Northeastern University's Information Technology Providers Group.

David Benirschke

University of Notre Dame, Intelligence Community (IC) Postdoctoral Research Fellowship Program

Dr. David Jerome Benirschke received his B.S. in Electrical Engineering from Purdue University in 2014. As an undergraduate, he was a SIST (Summer Intern in Science and Technology) intern at Fermilab working on detector design for the muon-to-electron conversion experiment (Mu2e). In 2014 David was awarded The Dean's Fellowship at the University of Notre Dame, where he completed his Ph.D. in Electrical Engineering under the supervision of Dr. Scott Howard. His Ph.D. research focused on realizing a low-cost explosives detection platform utilizing inexpensive Vanadium-oxide (VOx) microbolometer imaging arrays. This research was sponsored by ALERT (Awareness and Localization of Explosives Related Threats).

Currently, David is a post-doctoral researcher at Notre Dame working under the Intelligence Community (IC) Postdoctoral Research Fellowship Program. His research focuses on spectroscopic imaging applications utilizing dual-comb spectroscopy.

Romain Blanchard

Pendar Technologies

Dr. Romain Blanchard is Senior Director of the Safety & Security branch at Pendar Technologies, commercializing compact, rugged and intelligent sensor systems for chemical analysis. He was previously Director of Technology at Pendar, where he led the design of new products and solutions and oversaw internal R&D efforts and government programs. He received his PhD in Applied Physics from Harvard University and his MS from Ecole Polytechnique in Paris, France. Dr. Blanchard has authored or coauthored more than 50 technical papers as well as numerous granted and provisional patents.

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Octavia I. Camps

Northeastern University

Octavia I. Camps received the B.S. degree in computer science and the B.S. degree in electrical engineering from the Universidad de la Republica (Montevideo, Uruguay), and the M.S. and Ph.D. degrees in electrical engineering from the University of Washington. She is a Professor in the Electrical and Computer Engineering Department at Northeastern University. From 1991 to 2006 she was a faculty member at the departments of Electrical Engineering and Computer Science and Engineering at The Pennsylvania State University. In 2000, she was a visiting faculty at the California Institute of Technology and at the University of Southern California. Her current research interests include robust computer vision, image processing, and machine learning.

David Castañón

Boston University

Professor David Castañón received his Ph.D. degree in Applied Mathematics from the Massachusetts Institute of Technology in 1976. He was chief scientist at ALPHATECH, Inc. in Burlington, MA until 1990, when he joined Boston University's Department of Electrical and Computer Engineering. He is a past president of the IEEE Control Systems Society and received the Society's Distinguished Member Award. He also served on the Air Force Scientific Advisory Board. At Boston University, he served as Department Chair, and as co-director of the Center for Information and Systems Engineering. He is currently a Thrust Leader in the Department of Homeland Security's ALERT Center of Excellence on explosives detection, in charge of Video Analytics and Signature Analysis. His research interests include stochastic control, estimation, game theory and optimization, with applications to inverse problems, object recognition, sensor management, and security.

Carl R. Crawford

Csuptwo

Carl Crawford is president of Csuptwo, LLC, a technology development and consulting company in the fields of medical imaging and explosive detection for Homeland Security. He has been a technical innovator in the fields of computerized imaging for more than thirty years. His technology has resulted in 90 U.S. Patents. Dr. Crawford was the Technical Vice President of Corporate Imaging Systems at Analogic Corporation, Peabody, Massachusetts, where he led the application of signal and image processing techniques for medical and security scanners. He developed the reconstruction and explosive detection algorithms for a computerized tomographic (CT) scanner deployed in airports worldwide. He was also employed at General Electric Medical Systems, Milwaukee, Wisconsin, where he invented the enabling technologies for helical scanning for medical CT scanners and physiological motion compensation for projection-based imaging systems. At Elscint, Haifa, Israel, he developed technology for cardiac CT scanners. He also has developed technology for magnetic resonance imaging (MRI), single photon emission tomography (SPECT), positron emission tomography (PET), ultrasound imaging, dual energy imaging and automated threat detection algorithms. He has a PHD in electrical engineering from Purdue University. He is a Fellow of the IEEE and a Fellow of the American Association of Physicists in Medicine (AAPM).

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Jennifer G. Dy

Northeastern University

Dr. Jennifer G. Dy is a professor at the Department of Electrical and Computer Engineering, Northeastern University, Boston, MA, since 2002. She obtained her MS and PhD in 1997 and 2001 respectively from the School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN, and her BS degree in 1993 from the Department of Electrical Engineering, University of the Philippines. She received an NSF Career award in 2004. She is an editorial board member for the journal, Machine Learning since 2004, publications chair for the International Conference on Machine Learning in 2004, and program committee member for ICML, ACM SIGKDD, AAAI, and SIAM SDM. Her research interests include Machine Learning, Data Mining, Statistical Pattern Recognition, and Computer Vision.

John M. Fortune

DHS Science and Technology (S&T) Directorate, Department of Homeland Security

Dr. John M. Fortune is the Screening at Speed Program Manager in the DHS Science and Technology (S&T) Directorate. The Screening at Speed Program is pursuing transformative R&D activities that support a future vision for increasing aviation security effectiveness and improving the passenger experience. He also leads the Screening Program Management Team in S&T's Office of Mission Capability and Support. Previously, Dr. Fortune was a Branch Chief in S&T's Resilient Systems Division, where he focused on enhancing resilience of the Nation's most critical infrastructure sectors, such as energy, transportation, water, and communications. He managed the Resilient Tunnel Project, which developed inflatable plugs to protect subway tunnels from flooding. He also oversaw several projects to assess vulnerability and design countermeasures for critical transportation infrastructure, including development of a blast protection strategy that was purchased and installed by a major U.S. mass transit agency. In his earlier work at S&T, Dr. Fortune served in the Emerging Threats Portfolio, where he oversaw a nationwide assessment of underwater subway tunnels, a high priority effort requested by the TSA Administrator, and he worked closely with the intelligence community to understand potentially disruptive threats to the Nation's security. Dr. Fortune came to DHS in 2005 as a Science and Technology Policy Fellow with the American Association for the Advancement of Science. Prior to joining DHS, Dr. Fortune was a researcher at the National Institute of Environmental Health Sciences. He holds a Ph.D. in biochemistry from Vanderbilt University and a B.S. in chemistry from Duke University.

Otto J. Gregory

University of Rhode Island

Otto J. Gregory, PhD. is currently Distinguished Engineering Professor in the Department of Chemical Engineering at the University of Rhode Island and Director of the URI Sensors and Surface Technology Partnership for Research and Education. He received B.S. and M.S. degrees in Chemical Engineering from the University of Rhode Island in 1975 and 1977, respectively and a Ph.D. degree in Engineering from Brown University in 1983. His research has focused on sensors for harsh environments for the past 40 years and he has authored/co-authored more than 110 peer reviewed journal articles, which have provided the background for 42 US Patents. His research is currently funded by the Department of Homeland Security (DHS), The Flex-Tech Alliance (DOD), Pratt and Whitney Aircraft Engines, RI Innovations and private industry.

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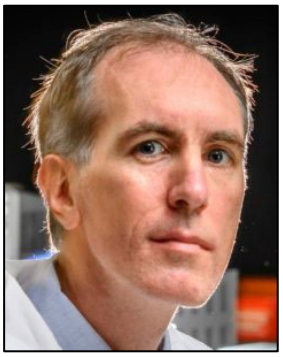
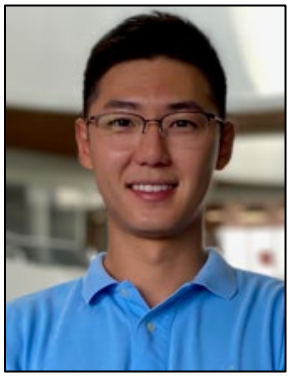


Scott Howard

University of Notre Dame

Dr. Scott Howard is an Associate Professor in the Department of Electrical Engineering at the University of Notre Dame. His research focuses on improving the speed and sensitivity of molecular imaging technology. The group's work includes developing new hardware and open-source software tools for real-time chemical imaging for biomedical and defense applications to produce low-noise, super-resolution images in complex and experimentally challenging environments. Prof. Howard earned a PhD in electrical engineering from Princeton University in 2008, and was a post doctoral research associate in the School of Applied and Engineering Physics at Cornell University. He was the recipient of an NSF CAREER award in 2016, and his work is supported by DHS (ALERT COE), NSF (CBET), and NIH (NIBIB).



Sungho (Ryan) Kang

Northeastern University

Sungho Kang received his B.S. degree in electrical engineering from University of Illinois at Urbana Champaign, Illinois, USA in 2014 and M.S. degree in electrical and computer engineering from Northeastern University, Boston, Massachusetts, USA in 2017. He is currently pursuing his Ph.D. degree in electrical engineering at Northeastern University, Boston, Massachusetts, USA. His research focuses on low/zero power IR MEMS sensors, plasmonic metamaterials for application in chemical and IR sensing and AlN resonant sensors. He is the recipient of the Outstanding Paper Award at the 32nd IEEE international Conference on Micro Electro Mechanical Systems (MEMS 2019).

Limor Martin

SeeTrue AI

Dr. Limor Martin is an Algorithms Team Leader at SeeTrue AI, an Israeli startup providing threat detection software for X-ray and CT systems. Prior to SeeTrue, Limor was an Algorithm Developer at Cortica and at Applied Materials. Dr. Martin received a Ph.D. and an M.Sc. in Electrical and Computer Engineering from Boston University (BU) and a B.Sc. in Electrical and Computer Engineering from Ben Gurion University in Israel. While pursuing her Ph.D. at BU she studied detection of explosives in baggage from CT scans using machine learning and image reconstruction methods and was advised by Prof. W. C. Karl and Prof. P. Ishwar. The research was part of the Homeland Security Center of Excellence for Awareness and Localization of Explosives Related Threats (ALERT).

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Henry Medeiros

Marquette University

Henry Medeiros is an Assistant Professor of Electrical and Computer Engineering at Marquette University. His research interests include computer vision and robotics, and his work has been applied to problems of practical relevance in areas ranging from manufacturing to agricultural automation and public safety. He has published over 40 journal and peer-reviewed conference papers and holds several US and international patents. He is a senior member of the IEEE and an associate editor for the IEEE International Conference on Robotics and Automation and the IEEE/RSJ International Conference on Intelligent Robots. Before joining Marquette, he was a Research Scientist at the School of Electrical and Computer Engineering at Purdue University and the Chief Technology Officer of Spensa Technologies, a technology start-up company located at the Purdue Research Park. At Spensa, he led a team that designed automated insect monitoring systems for agricultural crops. He received his Ph.D. from the School of Electrical and Computer Engineering at Purdue University as a Fulbright scholar.

Rebecca Medina

Department of Homeland Security Science and Technology Directorate

Rebecca Medina is the newly named Director of the Office of University Programs (OUP) at the Department of Homeland Security Science and Technology Directorate. Prior to joining OUP, she served as the Directorate's Attaché at the U.S. Embassy London and as the European Branch Chief, managing all research and development partnerships in Europe, including with the North Atlantic Treat Organization. Within the Directorate Ms. Medina also served as the Senior Policy Advisor for the Explosives Division, coordinating their interactions with Congress, the media and international partners. She came to DHS S&T in 2005 with Booz Allen Hamilton and worked in Office of Systems Engineering and Design.

Prior to joining the Department of Homeland Security, Ms. Medina spent three years as a Senior Defense Analyst at the Government Accountability Office where her major efforts focused on reviews of force structure realignment at the Department of Defense and international public health initiatives being led by the Department of State. She also worked for the United States Senate and The Washington Institute for Near East Policy.

Ms. Medina holds a Master of Public Policy from the Kennedy School of Government, Harvard University and a Bachelor of Arts in Political Science from Miami University.

Matthew Merzbacher

Alameda County Community Food Bank

Dr. Merzbacher recently retired from his position as Director of Certification and Qualification at Smiths Detection. There, and before that at Morpho Detection, Matthew was responsible for detection testing across products for explosives, chemical, and radiation detection. He also served as co-chair of the ANSI standards group on image quality for CT-based explosives detection systems and chaired the NEMA DICOS Threat Detection Working Group. Matthew joined InVision Technologies in 2003 as a Research Scientist in the Machine Vision group before taking over as manager of that group. Dr. Merzbacher has a Ph.D. in Computer Science from UCLA, specializing in data mining. He has several patents on image processing for explosives detection. He spends his time in the more rewarding pursuits of hiking and volunteering at the local food bank.

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Eric Miller

Tufts University

Professor Eric Miller received a B.S. in 1990, an M.S. in 1992, and a Ph.D. in 1994, all in electrical engineering and computer science at MIT. He is a professor in and the chair of the Department of Electrical and Computer Engineering at Tufts School of Engineering and holds adjunct appointments in the Departments of Computer Science and Biomedical Engineering. His research interests include physics-based tomographic image formation and object characterization, inverse problems in general and inverse scattering in particular, regularization, statistical signal and imaging processing, and computational physical modeling.

Jimmie Oxley

University of Rhode Island

Dr. Oxley is the Characterization & Elimination of Illicit Explosives Lead for the ALERT Center. Dr. Oxley is also a Professor of Chemistry at the University of Rhode Island (URI) and co-Director of the Forensic Science Partnership of URI. She earned a Ph.D. from the University of British Columbia (Chemistry) and joined the faculty of New Mexico Institute of Mining & Technology (NMT) where she founded a Ph.D. program in explosives and created a Thermal Hazards Research group. Oxley's lab specializes in the study of energetic materials—explosives, propellants, pyrotechnics. Dr. Oxley has organized numerous symposia and short courses for government and industrial laboratories on topics ranging from hazards analysis to bomb threats. Dr. Oxley has authored 80 papers on energetic materials (explosives, propellants, pyrotechnics).

Laura Parker

Department of Homeland Security

Laura Parker is the Senior Advisor for Sensors in the Science and Technology Directorate at the Department of Homeland Security. She is also the Program Manager for the ALERT Center of Excellence, a DHS-sponsored consortium of universities led by Northeastern University to perform research that address explosive threats. Laura, most recently, was the Program Manager for the Next Generation Explosives Trace Detection Program focused on developing advanced explosives trace detectors for use at checkpoints and other DHS operational environments. Laura has worked on a variety of research projects focused on explosives screening technologies to include algorithm and hardware development and interfacing with DHS components such as Transportation Security Administration, Customs and Border Protection, US Secret Service, the US Coast Guard and other government agencies. Previously, Laura worked as a contractor providing technical and programmatic support of chemical and biological defense and explosives programs for several Department of Defense (DoD) offices. She also performed research in several US Navy laboratories in the field of energetic materials. She obtained her Ph.D. in chemistry from the Pennsylvania State University.

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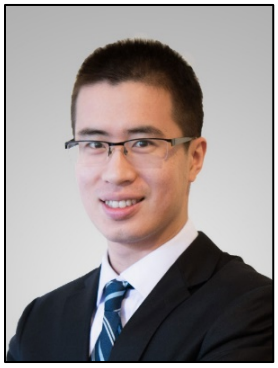

Zhenyun Qian

Northeastern University

Zhenyun Qian is a Research Assistant Professor with the Electrical and Computer Engineering Department at Northeastern University. His research interests include piezoelectric MEMS resonators, 2D materials enhanced NEMS devices, zero-power environmental sensors, and agriculture sensor systems. He has published more than 60 papers and holds several device patents/applications in the field of MEMS/NEMS. Dr. Qian is also a Co-founder of Zepsor Technologies, a start-up company that aims to bring to market zero standby power sensors for various IoT applications including fire protection, building automation and digital agriculture.

Fernando Quivira

Engineering Consultant

Fernando Quivira received the B.Sc. degree in electrical and computer engineering and the Ph.D. degree in electrical engineering from Northeastern University in 2013 and 2018, respectively. His Ph.D. work was centered around brain-body computer interface design and implementation with a focus on applying statistical signal processing and machine learning to physiological data. His research interests include mathematical methods in signal processing and imaging (CT, Ultrasound, among others) and high-performance computing using GPUs.

Richard J. Radke

Rensselaer Polytechnic Institute

Richard J. Radke joined the Electrical, Computer, and Systems Engineering department at Rensselaer Polytechnic Institute in 2001, where he is now a Full Professor. He has B.A. and M.A. degrees in computational and applied mathematics from Rice University, and M.A. and a Ph.D. degree in electrical engineering from Princeton University. His current research interests involve computer vision problems related to human-scale, occupant-aware environments, such as person tracking and re-identification with cameras and range sensors. Dr. Radke is affiliated with the NSF Engineering Research Center for Lighting Enabled Services and Applications (LESA), the DHS Center of Excellence on Explosives Detection, Mitigation and Response (ALERT), and Rensselaer's Experimental Media and Performing Arts Center (EMPAC) and Cognitive and Immersive Systems Laboratory (CISL). He received an NSF CAREER award in March 2003 and was a member of the 2007 DARPA Computer Science Study Group. Dr. Radke is a Senior Member of the IEEE and a Senior Area Editor of IEEE Transactions on Image Processing. His textbook Computer Vision for Visual Effects was published by Cambridge University Press in 2012. His YouTube Channel contains many annotated lectures on signal processing, image processing, and computer vision.

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Carey Rappaport

Northeastern University

Carey M. Rappaport received five degrees from the Massachusetts Institute of Technology: the SB in Mathematics, the SB, SM, and EE in Electrical Engineering in June 1982, and the PhD in Electrical Engineering in June 1987. He is married to Ann W. Morgenthaler, and has two children, Sarah and Brian. Prof. Rappaport joined the faculty at Northeastern University in Boston, MA in 1987. He has been Professor of Electrical and Computer Engineering since July 2000. In 2011, he was appointed College of Engineering Distinguished Professor. He was Principal Investigator of an ARO-sponsored Multidisciplinary University Research Initiative on Humanitarian Demining, Co-Principal Investigator and Associate Director of the NSF-sponsored Engineering Research Center for Subsurface Sensing and Imaging Systems (CenSSIS), and Co-Principal Investigator and Deputy Director of the DHS-sponsored Awareness and Localization of Explosive Related Threats (ALERT) Center of Excellence. Prof. Rappaport has authored over 425 technical journal and conference papers in the areas of microwave antenna design, electromagnetic wave propagation and scattering computation, and bioelectromagnetics, and has received two reflector antenna patents, two biomedical device patents and three subsurface sensing device patents. He was awarded the IEEE Antenna and Propagation Society's H.A. Wheeler Award for best applications paper, as a student in 1986. He is a member of Sigma Xi and Eta Kappa Nu professional honorary societies.

Matteo Rinaldi

Northeastern University

Matteo Rinaldi is a Full Professor in the Electrical and Computer Engineering department at Northeastern University and the Director of *Northeastern SMART,* a university research center that, by fostering partnership between university, industry and government stakeholders, aims to conceive and pilot disruptive technological innovation in devices and systems capable of addressing fundamental technology gaps in several fields including the Internet of Things (IoT), 5G, Quantum Engineering, Digital Agriculture, Robotics and Healthcare. Dr. Rinaldi received his Ph.D. degree in Electrical and Systems Engineering from the University of Pennsylvania in December 2010. He worked as a Postdoctoral Researcher at the University of Pennsylvania in 2011 and he joined the Electrical and Computer Engineering department at Northeastern University as an Assistant Professor in January 2012. Dr. Rinaldi's group has been actively working on experimental research topics and practical applications to ultra-low power MEMS/NEMS sensors (infrared, magnetic, chemical and biological), plasmonic micro and nano electromechanical devices, medical micro systems and implantable micro devices for intra-body networks, reconfigurable radio frequency devices and systems, phase change material switches, 2D material enabled micro and nano mechanical devices.

The research in Dr. Rinaldi's group is supported by several Federal grants (including DARPA, ARPA-E, NSF, DHS), the Bill and Melinda Gates Foundation and the Keck Foundation with funding of $16+ million since 2012.

Dr. Rinaldi has co-authored more than 150 publications in the aforementioned research areas and also holds 11 patents and more than 10 device patent applications in the field of MEMS/NEMS.

Prof. Rinaldi is the founder and CEO of *Zepsor Technologies*, a start-up company that aims to bring to market zero standby power sensors for various internet of things applications including distributed wireless fire monitoring systems, battery-less infrared sensor tags for occupancy sensing and distributed wireless monitoring systems of plant health parameters for digital agriculture.

Prof. Rinaldi is also the owner of *Smart MicroTech Consulting LLC*, a company that routinely provides consulting services to government agencies, large companies and startups in the broad areas of Micro and Nano Technologies, Internet of Things, Wireless Communication devices and systems, Radio Frequency Devices and Systems and Sensors.

R. Alex Showalter-Bucher

Formerly with MIT Lincoln Laboratory, Currently with DarkPumpkin AI

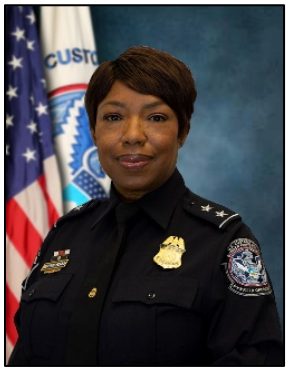
Alex Showalter-Bucher was an Associate Technical Staff at MIT Lincoln Laboratory for seven years where he focused on solving national security problems related to missile defense and homeland protection. His technical work included a wide-range of areas such as analysis of complex systems-of-systems, modeling and simulation of a numerous sensor modalities, and the development and application of state-of-the-art machine learning techniques. He has recently left MIT to focus on the research and development of computer vision algorithms for augmented/virtual reality technologies.

Alex received a B.A. in Physics (2010) from Gettysburg College and two degrees from Northeastern University: a M.S. in Electrical Engineering with a certificate in Engineering Leadership (2013) and a M.S. in Computer Science (2020). He was also a recipient of an ALERT DHS HS-STEM Career Development Fellowship in 2011.

Michael B. Silevitch

Northeastern University

Michael B. Silevitch is currently the Robert D. Black Professor of Engineering at Northeastern University in Boston, an elected life fellow of the IEEE, the Director of the Homeland Security Center of Excellence for Awareness and Localization of Explosives Related Threats (ALERT), and the Director of the Bernard M. Gordon Center for Subsurface Sensing and Imaging Systems (GordonCenSSIS), a graduated National Science Foundation Engineering Research Center (ERC). His training has encompassed both physics and electrical engineering disciplines. An author/co-author of over 65 journal papers, his research interests include laboratory and space plasma dynamics, nonlinear statistical mechanics, and K-12 science and mathematics curriculum implementation. Prof. Silevitch is also the creator of the Gordon Engineering Leadership (GEL) Program at Northeastern University, a graduate curriculum offered through the College of Engineering, with the mission of creating an elite cadre of engineering leaders. He and the current GEL Director, Simon Pitts, were awarded the 2015 Bernard M. Gordon Prize for Engineering Education by the National Academy of Engineering (NAE).



LaFonda Sutton-Burke

Los Angeles International Airport

LaFonda D. Sutton-Burke was appointed as the Area Port Director for the U.S. Customs and Border Protection (CBP), Office of Field Operations (OFO), Los Angeles International Airport (LAX), in March 2020. LAX is the second busiest international airport in the United States with 5.6 million international passengers, and over 33,177 flights arriving in Fiscal Year 2020. In this capacity, Mrs. Sutton-Burke oversees all operational and administrative aspects of port security, passenger, tactical and trade enforcement and facilitation at four international terminals at LAX, Ontario, John Wayne, and McCarran International Airport, in Las Vegas, Nevada, five User Fee Airports, sixty-six warehouses, five express courier consignment facilities, one International Mail Facility, and one Deferred

Inspection Office. She directs a workforce of 1,089 employees, responsible for processing over $60 billion in imports, and collecting over $1.4 billion in duties, taxes and fees, and has fiduciary responsibility of a $17.6 million overtime budget.

Mrs. Sutton-Burke began her Senior Executive Service career in January 2017, as the Area Port Director at the Los Angeles/Long Beach Seaport, the United States' largest seaport complex, receiving approximately 36 percent of maritime cargo, with a value of $244 billion, arriving at the Nation's seaports. As the Port Director, she directed a workforce of over 608 employees, and managed the seaport's multimillion-dollar Non-Intrusive Inspection (NII) technology portfolio to prevent entrance of illicit contraband and materials while facilitating the flow of legitimate trade and travel.

Mrs. Sutton-Burke has served CBP in progressive operational and leadership roles for over 27 years. Prior to her appointment, she served as the NII Division Director from 2012 to 2016 and NII Deputy Director from 2010 to 2012 at OFO Headquarters. As the Director, she was responsible for overseeing CBP's $4.6 billion NII technology portfolio, and as the Deputy Director, she was responsible for implementing technology innovations and improvement across the fleet - consisting of over 40,000 x-ray and imaging systems deployed and utilized across CBP's 328 air, land and maritime ports of entry. Mrs. Sutton-Burke joined the U.S. Customs Service as a U.S. Customs Inspector in El Paso, Texas in 1993.

Mrs. Sutton-Burke is a graduate of the National Defense University (Capstone General and Flag Officer Course); University of Maryland, Robert H. Smith School of Business (CBP Leadership Institute); Harvard Kennedy School (Senior Manager's in Government program); and University of Central Oklahoma, Bachelor of Science in General Education, Oklahoma National Guard, Officer Candidate School, and The U.S. Army Logistics University, Fort Lee, Virginia, Logistics Officer Course.

Mrs. Sutton-Burke is married to Clinton Burke and they are the proud parents of one daughter, Sequoyah Burke.

Melissa L. Sweat

Defense Threat Reduction Agency (DTRA)

Dr. Melissa L. Sweat is a Research Chemical Engineer with the Defense Threat Reduction Agency (DTRA). Currently, she is matrixed to the Decontamination Sciences Branch at the United States Army Combat Capabilities Development Command Chemical Biological Center (CCDC CBC). Most recently, her work has focused on understanding the contact transfer of liquid and solid chemical agents, as well as an investigation into the chemical penetration of hazardous materials into paint coatings. Before coming to CBC, Melissa completed an ORISE Postdoctoral Fellowship at the Transportation Security Laboratory, specializing in particle characterization and adhesion, as well as explosives residues evaluations for airport security applications. Prior to her postdoctoral work, she earned her B.S. in Chemical Engineering from Mississippi State University in 2010, and her Ph.D. in Chemical Engineering at Purdue University in 2015. Her doctoral work focused on the mechanical behavior of C-4, with emphasis on the particulate and polymeric behaviors.