7th Annual Ohio Innovation Sensor Summit
October 7-9, 2014
1700 S. Patterson Blvd. Dayton, OH 45409

REGISTER ONLINE TODAY

Active Federal Government Employees: $0
Academia/Students/State and Local Government Employees: $100
Standard Registration before September 30, 2014: $150
Late/Walk-in Registration after September 30, 2014: $175
(includes lunch for 3 days, breaks, and mixer event)
Registration is also available for select sessions
www.ohioinnovationsummit.org

SESSIONS

Tuesday, October 07, 2014

- **High Performance Processing for Sensor Applications**
- **Integration Across the ISR Enterprise/RF Technologies**
- **Remote Sensing Solutions: Defense and Commercial**
- **Sensor Technology**

Wednesday, October 08, 2014

- **Understanding Human Performance through Sense, Assess, and Augment**
- **Autonomy**
- **Technology to Aid Law Enforcement**

Thursday, October 09, 2014

- **A View to the Future (Track 1)**
- **Manufacturing Growth and Additive Manufacturing**
- **A View to the Future (Track 2)**
- **International Funding and Collaboration Opportunities: DRITA, BIRD, and Dayton FTZ**

The Ohio Innovation Summit (OIS) is designed to inform the sensors community about emerging technologies and market opportunities which are vital for future solutions to critical needs. The interaction between government, industry, and academia spawns new collaborations that accelerate research and development, and provides the impetus for regional economic growth.

Our goals are to expand your thoughts of the possible and to encourage relationships for next generation technology innovations that will keep Ohio growing and its sensors industry and academic foundation in a nationally-recognized leadership position. Part of the basis for the high level of success and participation in the past six Summits has been the extraordinary themes and presentations have been given by technical leaders from around the world. This year's conference continues this strong tradition, as well as identifying the collaborative achievements, the success, and the potential for Ohio's strong sensor community.

We are pleased to announce two keynote speakers at the 2014 OIS, one of which is Dr. Steven H. Walker, Deputy Director of the Defense Advanced Research Projects Agency (DARPA). Immediately prior to this, he held the position of director of the Tactical Technology Office (TTO) at DARPA. Dr. Walker has served in the Air Force Research Laboratory's Air Vehicles Directorate in Dayton, Ohio, providing expertise in airplane exhaust system fluidics and aero-acoustic modeling and simulation research. Subsequent assignments include Program Manager of the Unsteady Aerodynamics and Hypersonics Research Program at the AFRL's Air Force Office of Scientific Research in Arlington, Va., and special assistant to the Director, Defense Research and Engineering at the Pentagon. Dr. Walker previously served in DARPA as a TTO program manager and as TTO deputy director. As a program manager, he initiated the $500 million DARPA/Air Force Falcon program to develop and flight test technologies for long duration hypersonic flight and affordable, responsive space lift. Prior to his August 2012 return to DARPA, Dr. Walker served as Deputy Assistant Secretary of the Air Force for Science, Technology and Engineering, Office of the Assistant Secretary of the Air Force for Acquisition, Washington, D.C. He was responsible for preparing policy, guidance, and advocacy for the Air Force's annual $2 billion science and technology program, providing functional management for more than 14,000 military and civilian scientists and engineers. He provided annual testimony to Congress, technical advice and counsel to the Air Force Acquisition Executive, and made Air Force science and technology recommendations to the Office of the Secretary of Defense.

Mr. Earl Wyatt, Deputy Assistant Secretary of Defense for Emerging Capabilities and Prototyping in the Office of the Assistant Secretary of Defense for Research & Engineering, is also a keynote speaker. Mr. Wyatt informs acquisition policy and advances leading edge technologies through the development of advanced technology concepts, and developmental and operational prototypes. Working closely with interagency partners, academia, and industry, as well as governmental labs, he identifies, develops, and demonstrates multi-domain technologies and concepts that address high-priority DoD, Multi-Service, and Combatant Command needs.

Prior to assuming his current position, Mr. Wyatt served as the Deputy Assistant Secretary of Defense, Rapid Fielding, and was responsible for developing and fielding operational prototypes to satisfy urgent warfighting needs. Previously, Mr. Wyatt served as a Defense Team Principal, Science, Technology and Unmanned Systems Subject Matter Expert for Booz Allen Hamilton, where he was responsible for providing assistance to the Defense Advanced Research Projects Agency's Tactical Technology and Strategic Technology Offices, and the Air Force Research Laboratory's Air Vehicles, Sensors, Propulsion, and Material and Manufacturing Directorates. He supported the development and demonstration of innovative concepts for advanced platforms, weapons, space systems, maritime operations, information assurance, and strategic and tactical networks for the Air Force, Army, Navy, and Marine Corps. Before joining Booz Allen Hamilton, Mr. Wyatt served in the United States Air Force for more than 26 years, achieving the rank of Colonel, and held the positions of Air Force Acquisition Professional Development Level III Program Manager and DARPA Unmanned Combat Air Vehicle (UCAV) Program Manager, as well as many other positions.

We are also pleased to announce Dr. Andreas Tolk, Chief Scientist, SimsIS, Inc., a world's leading experts on Simulation and Modeling of Autonomous/Complex Systems will also be joining us at the Summit. Dr. Tolk will be moderating the Autonomy Session, from 1:00-4:30 on Wednesday, October 8. In the Thursday "View to the Future Session," Dr Tolk will also be giving a presentation on the future of simulation and modeling for complex systems. Dr. Andreas Tolk is Chief Scientist at SimIS Inc. in Portsmouth, Virginia. He is responsible for the evaluation of emerging technologies regarding their applicability for modeling and simulation applications, in particular in the domains of medical simulation, defense simulations, and architectures of complex systems. He is an adjunct professor at Old Dominion University. Dr. Tolk has been a faculty member (Full Professor) in the Department of Engineering Management and Systems Engineering at Old Dominion University from 2006 to 2013. He held a joint appointment with the Modeling, Simulation, and Visualization Engineering department. He received his Ph.D. in Computer Science (1995) and has a M.S. in Computer Science (1988) from the University of the Federal Armed Forces, Germany. His emphasis was Applied Systems Science and Military Operations Research. He received the Excellence in Research award from the Frank Batten College of Engineering and Technology in 2008, the first Technical Merit Award of the Simulation Interoperability Standards Organization (SISO) in 2010, the Outstanding Professional Contribution award of the Society for Modeling and Simulation (SCS) in 2012, and the Distinguished Professional Achievement award of SCS in 2014. Dr. Tolk has edited six text books on systems engineering, modeling, and simulation. He published more than 250 articles and papers in journals and conferences. He received over 30 "best paper" awards for his contributions. Dr. Tolk served as the Technical Evaluator and Rapporteur for NATO's Research and Technology Organization for the annual NATO M&S Symposium between 2003 and 2011. He served on the IEEE Computer Science board for the "IEEE Smart Grid Vision for Computing: 2030 and Beyond" as an expert for M&S and interoperability.

This year, the Sensor Summit will feature sessions on performance processing for sensor applications, integration across the ISR enterprise/RF technologies, remote sensing, state-of-the-art applications of sensor technology, human factors, interoperability, and autonomy. There is a full-day session devoted to technology that aids law enforcement, together with special sessions that will discuss manufacturing growth and additive manufacturing and international funding and collaboration opportunities, hosted by the Dayton Region Israel Trade Alliance (DRITA), the Israel-U.S. Binational Industrial Research and Development Foundation (BIRD), and the Greater Dayton Free Trade Zone, Inc. (FTZ).

Lastly, we are very pleased to announce something new for the Summit. On Thursday morning, October 9, we will be having a special two-track session entitled "A View to the Future." During this session, technology leaders for Radio Frequency Bandwidth, Simulation and Modeling, Additive Manufacturing, Image Processing, Carbon Fiber Materials, Logistics, Purposeful Sensor Exploitation, Fiber-Optic Arrays, and Chemical/Biological Sensing will be presenting what they feel these technologies will look like 10 to 15 years out.

We sincerely hope you will be able to join us.

Larrell Walters
Sensor Systems Division, UDRI
Director, IDCAST
Ohio Innovation Summit Chair

2014 Ohio Innovation Summit Is Sponsored By:

Tuesday, October 7, 2014

7:30-3:00	**REGISTRATION**	
8:15-8:30	**OPENING REMARKS**	**Larrell Walters, Division Head, Sensor Systems, UDRI**

DAY 1 CONCURRENT A.M. SESSIONS					
	Session: High Performance Processing for Sensor Applications	Moderator: Bill Turri, Group Leader, Remote Sensing Group, UDRI		**Session: Remote Sensing Solutions: Defense and Commercial**	Moderator: Tom Fitzgerald, Senior Research Engineer, Group Leader, Sensor Technology, UDRI
8:30-9:00	Acceleration of DSP Algorithms	Andrew Kordik, Digital Signals and Systems Engineer, UDRI and Ph.D. Student	8:30-9:00	Effects of Compression on Hyperspectral Data Analysis	Patrick Hytla, Image Processing Engineer, UDRI
9:00-9:30	FPGA Security	Ken Simone, Digital Systems Engineer, UDRI	9:00-9:30	Techniques for the Optical Scatter Characterization of Nano-Scale Metamaterials	Tom Fitzgerald, Senior Research Engineer, Group Leader, Sensor Technology, UDRI
9:30-10:00	Trading Features for Low Size, Weight, and Power: An H.264 Case Study	Christopher McGuinness, Image Processing Engineer, UDRI	9:30-10:00	Data Analysis for 3D Reconstruction of a Scene and 3D Change Detection	Yakov Diskin, Ph.D. Student, Center of Excellence for Computer Vision and Wide Area Surveillance Research (Vision Lab), University of Dayton
10:00-10:30	**BREAK**		10:00-10:30	**BREAK**	
10:30-11:00	Onboard Target Tracking	Karl Salva, Image Processing Engineer, UDRI and Charles Keating, Image Processing Engineer, UDRI	10:30-11:00	The Image Processing Pipeline for Open Skies Treaty Support	Philip Roth, Associate Sensor Researcher, UDRI

11:00-12:00	**KEYNOTE PRESENTATION**	**Dr. Steve Walker, Deputy Director, DARPA**
12:00-1:00	**LUNCH**	

DAY 1 CONCURRENT P.M. SESSIONS					
	Session: Integration Across the ISR Enterprise/RF Technologies	Moderator: Michael C. Wicks, Ph.D., Ohio Research Scholar for Sensor Exploitation, Sensor Systems, UDRI		**Session: Remote Sensing Solutions: Defense and Commercial (cont.)**	Moderator: Guru Subramanyam, Professor and Chair, Department of Electrical and Computer Engineering, University of Dayton
1:00-1:30	AFRL Sensors Directorate RF Range Measurement Capabilities	Gary Scalzi, RF Range Technical Lead, Multispectral Sensing and Detection Division, Sensors Directorate, AFRL	1:00-2:00	Fourier Multispectral Imaging	Keigo Hirakawa, Ph.D., University of Dayton and Andrew Sarangan, Ph.D., University of Dayton
1:30-2:00	Sensor Signal Processing for Integrated ISR	Muralidhar Rangaswamy, Ph.D., Fellow IEEE Principal Research Electronics Engineer Senior Advisor for Radar Research AFRL/RYAP			
2:00-2:30	Connectivity and Dissemination in Integrated ISR	Paul Antonik, Ph.D., ST for Connectivity and Dissemination in the USAF	2:00-2:30	Eazi-Pod Technology: Imagery on Demand	David Russell, Imagery Solutions, LLC
2:30-3:00	**BREAK**		2:30-3:00	**BREAK**	
3:00-3:30	The University of Dayton MUMMA Radar Lab: Capabilities and Opportunities	Lorenzo LoMonte, Senior Research Radar Systems Engineer, UDRI	3:00-3:30	Remote Sensing Applications to Precision Agriculture: Taking Precision Ag to the Next Level	Aurea L. Rivera, P.E., Imagineering Results Analysis Corporation

4:00-6:00	**SCIABICA AWARD AND MIXER at Warped Wing Brewing Company, 26 Wyandot St. Dayton, OH 45402**

Wednesday, October 8, 2014

7:30-3:00 **REGISTRATION**

DAY 2 CONCURRENT A.M. SESSIONS					
	Session: Understanding Human Performance through Sense, Assess, and Augment	Moderator: Joel Warm, Ph.D., Distinguished Scientist, Human Factors Group, UDRI		**Session: Technology to Aid Law Enforcement**	Moderator: Larrell Walters, Division Head, Sensor Systems and Hondo Imwalle, Software Scrum Master, UDRI
8:30-9:00	Sense, Assess, Augment: A Taxonomy for Human Effectiveness	Scott Galster, Ph.D., Chief, 711 HPW/RHCP Applied Neuroscience Branch, Air Force Research Laboratory	8:30-9:00	Law Enforcement Needs	Eric Henderson, Lieutenant, City of Dayton Police Department
9:00-9:30	In-Flight Physiological Monitoring: The F-22 and Beyond	Lloyd Tripp, Jr., Ph.D., Program Manager,711 HPW Aerospace Physiology and Toxicology Branch, Air Force Research Laboratory	9:00-10:00	Demonstration of the Footprint Situational Awareness System	Josh Handwerker, Lead Software Engineer, UDRI and Officer Chris Pawelski, City of Dayton Police Department
9:30-10:00	Leveraging Cognitive Techniques to Understand and Support ISR Analyst Assessment Tasks	Mike McCloskey, President, 361 Interactive			
10:00-10:30	**BREAK**		10:00-10:30	**BREAK**	
10:30-11:00	Human Augmentation: Non-Invasive Brain Stimulation for Performance Enhancement	Andy McKinley, Ph.D., Biomedical Engineer, 711 HPW/RHCP Applied Neuroscience Branch, Air Force Research Laboratory	10:30-11:00	Smart Facial Recognition System	Vijay Asari, Ph.D., Director, University of Dayton Vision Lab and Chen Cui, Ph.D. Student, University of Dayton Vision Lab

11:00-12:00 KEYNOTE PRESENTATION   **Earl C. Wyatt, Deputy Assistant Secretary of Defense**

12:00-1:00 **LUNCH**

DAY 2 CONCURRENT P.M. SESSIONS					
	Session: Autonomy	Moderator: Andreas Tolk, Ph.D., Chief Scientist, SimIS Inc.		**Session: Technology to Aid Law Enforcement (con't)**	Moderator: Hondo Imwalle, Software Scrum Master, UDRI
1:00-1:30	Using Agent-Based Methods to Support Sensemaking for Autonomous Systems	Andreas Tolk, Ph.D., Chief Scientist, SimIS Inc.	1:00-1:30	Video Exploitation and Demonstration	Amit Gavish, General Manager of BriefCam Americas
1:30-2:00	National Academies Autonomy Report Discussion	Larrell Walters, Division Head, Sensor Systems, UDRI	1:30-1:45	High Resolution, Rapid-Reaction Imaging	Aaron Boesch, Program Manager, Defense and Intelligence, Woolpert, Inc.
2:00-2:30	Robotic Aircraft for Public Safety	Kirk Kloeppel, Flight Test and Demonstration Support Lead to the U.S. Customs and Border Protection, Modern Technology Solutions, Inc.	1:45-2:00	Footprint: A GIS Perspective	Jon Downey, Geospatial Research and Development, Woolpert, Inc.
			2:00-2:30	Tenet3 Complex System Analysis	Jeff Scott, Research Engineer, and Jeff Hughes, President, Tenet3, LLC
2:30-3:00	**BREAK**		2:30-3:00	**BREAK**	
3:00-3:30	The Semi-Autonomous Motorcar (SAM) Project	Dr. Scott S. Grigsby, Senior Scientist, Aerospace and Cyberspace Technologies, Ball Aerospace and Technologies Corp.	3:00-3:30	Compact, Lightweight Lenses for Long-Range Imaging	Todd Rutherford, Managing Partner: Technology, Greenlight Optics
3:30-4:00	A Framework for Interoperability	Kevin Klawon, Group Leader, Software Systems, UDRI	3:30-4:00	Advancing Technology in Public Safety	Joe Errett, Product Manager and Senior Analyst, Optica Consulting, Inc.
4:00-4:30	Title to be Announced	Frank Beafore, Executive Director, SelectTech GeoSpatial Advanced Manufacturing Facility			

Thursday, October 9, 2014

8:00-1:00 **REGISTRATION**

DAY 3 CONCURRENT A.M. SESSIONS					
	Session: A View To The Future - Track 1	Moderator: Vijayan Asari, Ph.D., Director, University of Dayton Vision Lab		**Session: A View To The Future - Track 2**	Moderator: Larrell Walters, Division Head, Sensor Systems, UDRI
9:00-9:30	Upcoming Technologies to Address Large Bandwidth Requirements	John L. Volakis, Chope Chair Professor, Electrical and Computer Eng. Dept and Director, ElectroScience Laboratory	9:00-9:30	The Future of Simulation and Modeling for Complex Systems	Andreas Tolk, Ph.D., Chief Scientist, SimIS Inc.
9:30-10:00	Controlled Release of Functional Materials for Chem/Bio Sensing and Protection Using Electrospinning Fiber Technology	Andrew Steckl, Distinguished Research Professor; Gieringer Professor and Ohio Eminent Scholar, University of Cincinnati	9:30-10:00	Fiber-Arrays: A Coming Revolution in the Way We Build Optical Systems	Mikhail A. Vorontsov, Ph.D., D.Sc., Professor and Wright Brothers Endowed Chair, Intelligent Optics Laboratory, School of Engineering, University of Dayton
10:00-10:30	**BREAK**		10:00-10:30	**BREAK**	
10:30-11:00	Advanced Image Analysis for Automatic Object Recognition in Complex Environmental Conditions	Vijayan Asari, Ph.D., Director, University of Dayton Vision Lab	10:30-11:00	The Future of Remote Sensing Different Exploitable Observables In Concert with Time Line Analysis to Discern Intent	Michael C. Wicks, Ph.D., Ohio Research Scholar for Sensor Exploitation, Sensor Systems, UDRI
11:00-11:30	Metal Matrix Syntactics: Emerging Possibilities in Search of Innovative Minds	Oliver M. Strbik III, P.E., Executive Vice President, Deep Springs Technology, LLC	11:00-11:30	Carbon: Paving the Way to the Future	Khalid Lafdi, Ph.D., D.Sc., Wright Brothers Institute Endowed Chair; Professor, Chemical and Materials Engineering, University of Dayton
11:30-12:00	Additive Manufacturing of Viscoelastic Polymers: Opportunities and Challenges	Amy Yousefi, Ph.D., Schallek Associate Professor, Miami (Ohio) University	11:30-12:00	Logistics and Supply Chain: The Next 15 Years	David Garrison, Dean of the School of Business and Government, Ohio Christian University

12:00-1:00 **LUNCH**

DAY 3 CONCURRENT P.M. SESSIONS					
	Session: Manufacturing Growth and Additive Manufacturing	Moderator: Phil Ratermann, Senior Business Development Executive, FastLane, UDRI		**Session: International Funding and Collaboration Opportunities: DRITA, BIRD, and Dayton FTZ**	Moderator: Joe Tuss, Montgomery County Executive
1:00-1:20	FastLane/MEP Role for Additive Manufacturing in Ohio	Phil Ratermann, Senior Business Development Executive, FastLane, UDRI	1:00-1:05	Welcome and Opening Remarks	Larrell Walters, Division Head, Sensor Systems, UDRI
1:20-1:40	Ohio Advanced Manufacturing Technical Resources Network: An Update	Beth-Anne Schuelke-Leech, P.Eng, MBA, Ph.D., Director of Manufacturing Innovation and Policy, Ohio Manufacturing Institute; Assistant Professor, The John Glenn School of Public Affairs, The Ohio State University	1:05-1:10	Introduction of BIRD Presenters; Brief Remarks by the Israel Economic Mission to the Midwest	Howard Gudell, Local Partner, Ohio BIRD Representative/Daniel Blumenthal, Deputy Director
1:40-2:00	Overview of Additive Manufacturing Technologies	AFRL	1:10-1:45	Overview of BIRD Funding and Submission Process	Andrea Yonah, East Coast BIRD Representative
2:00-2:20	Research in Polymer Materials	Brian Rice, Division Head, Multiscale Composites and Polymers, UDRI	1:45-2:30	Presentation by BIRD Recipient: CVG/Silentium	James Haylett, NVH Manager, CVG, New Albany, OH and Yoel Naor, Chief Products Officer, Silentium, Israel
2:20-2:40	Rapid: Prototyping, Production, and Tooling	Ben Staub, President, Bastech	2:30-3:00	**BREAK**	
2:40-3:00	**BREAK**		3:00-3:10	Update on Ohio-Israel MOU	Joe Tuss, Montgomery County Executive
3:00-3:20	Local Success Story #1	Darrin Wittington, Midmark	3:10-3:20	Update on Dayton Region Israel Trade Alliance	Joe Tuss, Montgomery County Executive
3:20-3:40	Strategy for Additive Manufacturing in Defense	AFRL	3:20-3:30	Update on Foreign Trade Zone	Joe Tuss, Montgomery County Executive
3:40-4:00	Metals: Basic Machine Types/Technologies	Ian Harris, EWI, Director of Additive Manufacturing Consortium	3:30-5:00	Individual Business-To-Business Meetings with BIRD Representatives (pre-sign up is suggested) Please contact Benjamin Lootens, Benjamin.Lootens@udri.udayton.edu	
4:00-4:20	Local Success Story #2: Metal Additive Manufacturing in Medical Applications	John Frazier, Chief Technology Officer, DRT			
4:20-4:30	Question and Answer Session	Phil Ratermann, Senior Business Development Executive, FastLane, UDRI			