Virginia Beach Convention Center / Virginia Beach, VA

April 25-27, 2017

Monday	April 24
1300 - 1700	Exhibitor Move-In – Ballroom Three
1500 – 1700	Registration – Main Lobby – Near Ballroom Three
Tuesday	April 25
0630 – 1730	Registration – Main Lobby – Near Ballroom Three
0630 - 0800	Continental Breakfast – Ballroom Three
0800 – 0825	 MODSIM World 2017 Welcome and Opening Remarks – Ballroom Two Dr. Eric Weisel, Director of Applied Research, Old Dominion University, MODSIM World 2017 Conference Chair RADM James Robb, USN (Ret), President, National Training and Simulation Association (NTSA) Dr. John Sokolowski, President, The Society for Modeling and Simulation International Dr. Saurabh Mittal, Vice President of Membership, The Society for Modeling and Simulation International
0825 – 0830	Introduction of Industry Keynote Speaker – Ballroom Two Dr. Eric Weisel, Director of Applied Research, Old Dominion University, MODSIM World 2017 Conference Chair
0830 – 0930	Industry Keynote Speaker Address – Ballroom Two Dr. Pieter Mostermann, Chief Research Scientist and Director, MathWorks Advanced Research & Technology Office (MARTO) and Adjunct Professor, McGill University A Changing Technology Landscape with Value Drivers for Modeling & Simulation
0930 - 1830	Exhibit Displays, Challenge Competition Presentations and Demonstrations – Ballroom Three
0930 - 1000	Networking and Exhibit Time – Ballroom Three
0930 – 1830	 Innovation Corner – Ballroom Three Virtual and Mixed Reality Showcase at MODSIM World 2017 Experience how innovative virtual reality (VR) and mixed reality (MR) applications are being used to deliver transformative experiences in training, education and healthcare. A rotating selection of applications will expose attendees to the VR and MR technologies and teams pushing these media into a variety of verticals. Please refer to the Tabletops Displays section of the program for more details on the demonstrations. Demonstrations: C-130 Demo: Oculus Rift (Vertex) Descension: Gear VR (Janus Research) F/A-18 Demo: Oculus Rift + HoloLens (Bohemia Interactive) SHARD: HTC Vive (Plas.md)

Virginia Beach Convention Center / Virginia Beach, VA

April 25-27, 2017

Tuesday (continued)_

April 25

1000 – 1200 Special Event – Ballroom Two

"The Simulation Century" – Bringing Big Data to Life

In our session we will show how big data was used to resurrect and animate Victor Hugo and Alexander Hamilton. Can we animate and get inside the heads of adversaries? Build better teams? Don't miss this segment!

This year the Simulation Century Panel presentations will focus on technologies that help make big data come to life and be actionable, such as machine learning and simulation. These brief, high impact presentations will envision how 21st century technologies will shape humanity's future. **Moderator:** *Richard Boyd,* CEO, Tanjo, Inc.

Panel Members:

- Kevin Clark, Senior Venture Partner, 1 World Venture Partners
- Jennifer Arnold, Principal, Booz Allen Hamilton
- Jeff Frazier, Managing Director, Special Projects Office of the Chairman, Cisco Systems
- Anthony Cerri, Director, Data Science, Models, Simulations; TRADOC G27 OE Training Support Center (OE TSC)
- 1200 1330 Lunch and Exhibit Time Ballroom Three

1330 – 1500 Paper Session I:

ANALYTICS AND DECISION MAKING TRACK – Room 3A (located on the second floor)

1330 – 1400	Data Farming and The Black Swan
	Gary Horne, Blue Canopy Group
1400 – 1430	A Simulation on the Effect of a Major World War on the Population of the World
	Winnie Zhang, The Governor's School for Science and Technology
1430 – 1500	Simulating Foot and Mouth Disease in the United States using the Animal Disease
	Spread Model
	Melissa Schoenbaum, USDA: APHIS: VS: CEAH

SCIENCE AND ENGINEERING TRACK – Room 2C (located on the second floor)

1330 – 1500 Panel: Digital Manufacturing Revolution

The continued growth in capabilities of both the internet of things (IoT) as well as big data toolsets has led to a revolution in the manufacturing industry. As systems begin to generate more and more data, and companies are faced with transforming from traditional manufacturing practices to processes driven by software and analytics, modeling and simulation will play a key role in driving this next industrial revolution. This panel will discuss the ways in which three large manufacturers are adapting to the digital manufacturing revolution. Panelists will share ways their companies are adopting modeling and simulation driven technologies to drive exponential business returns.

Panel Members:

- Troy Hartwig, Staff Engineer, Simulation and Modeling Center of Excellence Leader, Honeywell
- Chris Heard, Modeling and Simulation Software Engineer, Newport News Shipbuilding
- **Dr. Vukica Jovanović,** Assistant Professor of Engineering Technology in Mechanical Engineering Technology Program, Old Dominion University

Virginia Beach Convention Center / Virginia Beach, VA April 25-27, 2017

Tuesday (continu	ıed)	April 25
TRAININ	IG AND EDUCAT	ION TRACK – Room 3B (located on the second floor)
	1330 – 1400	Large Scale Testing and Evaluation of Virtual Environments for Infantry Soldier Tasks Comparing Mental Effort for Live Versus Virtual Training Performance Assessments Dr. Douglas Maxwell, US Army Research Lab
	1400 – 1430	Effectiveness of Augmented Reality and Augmented Virtuality Dr. J. D. Fletcher, Institute for Defense Analyses
	1430 – 1500	Evaluating Game-Based Environments for Army Aviation Collective Training <i>Dr. Lauren Reinerman-Jones,</i> University of Central Florida, Institute for Simulation and Training
VISUALI	ZATION AND GA	MIFICATION TRACK – Room 2D (located on the second floor)
	1330 – 1400	Rolling the Dice: Using Low-Cost Tabletop Simulation to Develop and Evaluate High-Value CONOPS in Uncertain Tactical Environments Michael Erwin, Sonalysts
	1400 – 1430	Understanding Future Conflict Escalation Dynamics with Analytic Gaming Michael Lytwyn, SAIC
1500 – 1530	Networking and	d Exhibit Time – Ballroom Three
1530 – 1700	Paper Session II	:

ANALYTICS AND DECISION MAKING TRACK – Room 3A (located on the second floor)

1530 – 1700 Panel: Defending the Infrastructure with Modeling, Simulation and Training U.S. forces are applying cyber as an integrated component of combined operations, with cyberspace as a warfare domain. The 2015 DoD CyberStrategy makes clear that the cyber domain extends from the forward edge of battle to the heartland, and that cyber operations encompass strategic and tactical operations, as well as operations needed for mission continuity. The need for cyber training arrives at a time when our nation is under consistent, pervasive threat of cyber-attack upon everything from everyday connected devices to our political process. Our need for cyber warriors has never been greater, and modeling, simulation and training lies at the forefront of the DoD's strategic mission to strengthen the skills of cyber mission planners and operators. This panel brings together key cyber leadership in industry, government and academia to discuss mission critical aspects of cyber operations, and present modeling and simulation innovations underway to defend our nation's government and commercial infrastructure. Moderator: Samuel Visner, Senior Vice President/General Manager for Cybersecurity and Resilience, ICF International

Panel Members:

- COL Scott D. Lathrop, USA (Ret), Director of Secure Autonomy, SoarTech
- Dr. Deepinder Sidhu, President and CEO, Cyberspace Analytics Corporation
- Dr. Misty Blowers, Senior Fellow and Vice President of Cyber Research, ICF International

SCIENCE AND ENGINEERING TRACK – Room 2C (located on the second floor)

1530 – 1600	Harmonized Air Missile Space Training Environment	
	Warren Bizub, SimIS, Inc.	
1600 - 1630	Augmenting Model-Based Design with Human System Integration Advisor	
	Dr. Marc Abrams, Harmonia Holdings Group, LLC	
1630 – 1700	More Then the Sum of Their Parts: A Case Study in Learning Application Integration	
	Dr. Michael Freed, SRI International	

Virginia Beach Convention Center / Virginia Beach, VA April 25-27, 2017

Tuesday (continu	ıed)	April 25
TRAININ	IG AND EDUCAT	ION TRACK – Room 3B (located on the second floor)
	1530 - 1600	Using LiDAR Technology Combined with Position-Tracking Software Medical Training Evaluation System (MTES) in an Integrated After Action Review System for Mobile Medical Lane Training Erin Honold, Information Visualization and Innovative Research
	1600 – 1630	Analysis of Effective Speech Recognition in a Virtual Operating Room Dr. Levi Warvel, Old Dominion University
	1630 – 1700	Validation Process and Use Advantages of an Avatar Guided Computer Game-Based Patient Safety Program in a Large Level I Trauma Military Treatment Center Dr. V. Andrea Parodi, VMASC
VISUALI	ZATION AND GA	MIFICATION TRACK – Room 2D (located on the second floor)
	1530 – 1600	Navigating Augmented and Virtual Reality Hardware Choices John Williamson, SAIC
	1600 - 1630	Leveraging HTML5 and WebGL to Address Information Assurance Barriers for Simulation Based Training in the U.S. Military Michael Heilmann, University of Central Florida, Institute for Simulation and Training
	1630 – 1700	Cultivating Digital TLC – Teaching and Learning Communities Dr. Dominic Mentor, Columbia University
1700 – 1900		e Networking Event – Ballroom Three arks: Dr. Eric Weisel and Event Sponsor, VMASC
Wednesday		April 26

0700 – 1730	Registration – Main Lobby – Near Ballroom Three
0700 – 0800	Continental Breakfast – Ballroom Three
0800 - 0810	MODSIM World 2017 Day Two Opening Remarks – Ballroom Two Matt Spruill, Virginia Modeling and Simulation Partnership (VMSP)
0810 - 0815	Introduction of Government Keynote Speaker – Ballroom Two Dr. Eric Weisel, Director of Applied Research, Old Dominion University, MODSIM World 2017 Conference Chair
0815 – 0845	Government Keynote Speaker – Ballroom Two Dr. Paul Lehner, Chief, Test and Evaluation, Intelligence Advanced Research Projects Activity (IARPA) Innovative Applications of Modeling and Simulation in IARPA Test and Evaluation

Virginia Beach Convention Center / Virginia Beach, VA April 25-27, 2017

Wednesday (continued)_

April 26

0845 – 1015 Special Event – Ballroom Two

Senior Leader Panel: Digital Trends in Government and Industry

Senior Leaders from Government and Industry will share their insights on the role that M&S has in their organizations, their perspective on the issues and impact of M&S, and their thoughts on the gaps that M&S can fill in the future. Following their comments, attendees will have the opportunity to ask questions and gain a better understanding of the issues facing these leaders and the issues that M&S technology transformation can potentially address.

Moderator: RADM James Robb, USN (Ret), President, NTSA Panel Members:

- Jill Marlowe, Director, Research Directorate, NASA Langley Research Center
- Jesse Citizen, Director, DoD Modeling and Simulation Center Coordination Office
- Marty Vozzo, , Distributed Training Branch Head, NSWC Dahlgren Division/CDSA Dam Neck
- Frank DiGiovanni, Deputy Chief of Naval Personnel (Invited)

1015 – 1530 Exhibit Displays, Challenge Competition Presentations and Demonstrations – Ballroom Three

1015 – 1730 Innovation Corner – Ballroom Three

Virtual and Mixed Reality Showcase at MODSIM World 2017

Experience how innovative virtual reality (VR) and mixed reality (MR) applications are being used to deliver transformative experiences in training, education and healthcare. A rotating selection of applications will expose attendees to the VR and MR technologies and teams pushing these media into a variety of verticals. Please refer to the Tabletops Displays section of the program for more details on the demonstrations.

Demonstrations:

- C-130 Demo: Oculus Rift (Vertex)
- **Descension**: Gear VR (Janus Research)
- F/A-18 Demo: Oculus Rift + HoloLens (Bohemia Interactive)
- **SHARD**: HTC Vive (Plas.md)

1015 – 1045 Networking and Exhibit Time – Ballroom Three

1045 – 1115 VIP Technology Showcase – Ballroom Three

The Technology Showcase allows the Senior Leader Panelists to learn about the latest technologies and tools being developed by M&S companies first hand. These short, focused briefs, conducted in sequence, will highlight M&S products and services, address state-of-the-art technology implementations, and describe how consumers and customers may benefit from these technologies.

Moderator: Rex Wallen, Modeling and Simulation Systems Engineer, Newport News Shipbuilding

Virginia Beach Convention Center / Virginia Beach, VA April 25-27, 2017

Wednesday (continued)_

April 26

1045 – 1215 Paper Session III:

ANALYTICS AND DECISIO	ON MAKING TRACK – Room 3A (located on the second floor)
1045 – 1115	Training Equipment Life Cycle Awareness for Combat Training Centers Julie Kent, Raytheon
1115 – 1145	The Reference Model Predicts Life Expectancy for Diabetics Dr. Jacob Barkak
1145 – 1215	Creating Teaching and Learning Accountabilities through Data Analytic Feedback Loops <i>Dr. Dominic Mentor,</i> Columbia University

SCIENCE AND ENGINEERING TRACK – Room 2C (located on the second floor)

1045 – 1215 Panel: Modeling and Simulation in Support of Nuclear Energy Operations Though the nuclear industry is positioned to support some of the nation's energy needs, ensuring the technology and power sources are safe, clean and secure presents many challenges. This panel will discuss how the Department of Energy is working to provide safe solutions to the nuclear energy challenge, as well as ensuring the safe and secure disposal of legacy nuclear materials. Panelists will discuss how modeling and simulation is supporting the operation of nuclear processing facilities and research into the future of nuclear power.

Panel Members:

- Nick Miller, HB-Line Deputy Facility Manager, Savannah River Nuclear Solutions, LLC.
- Dr. Cristian Rabiti, Department Manager, Idaho National Laboratory
- Russ Shaffer, Systems Modeling and Simulation Engineer, Newport News Shipbuilding

TRAINING AND EDUCATION TRACK – Room 3B (located on the second floor)

1045 – 1115	Semantic Instrumentation of Virtual Environments for Training	
	Christian Greuel, SRI International	
1115 – 1145	Just a Shiny Object	
	Major Nicholas Armendariz, USMC, Training and Education Command	
1145 – 1215	Authoring Adaptive Tutors for Simulations in Psycho-Motor Skills Domains	
	Dr. Benjamin Bell, Eduworks Corporation	

VISUALIZATION AND GAMIFICATION TRACK – Room 2D (located on the second floor)

1045 – 1215 Panel: Navigating the Virtual and Mixed Reality Landscape of Today and Tomorrow The number of virtual, augmented and mixed reality (VR/AR/MR) platforms have exploded over the past three years, providing simulation developers with a new canvas on which to create experiences that fundamentally change verticals including defense, healthcare, education and more. Join us for a wide ranging panel where we will look at available VR/AR/MR platforms and best practices for leveraging these powerful new tools in simulation.

Panel Members:

- Vance Souders, Founder and CEO, Plas.md
- John Grant, Technology Innovation Manager, HT-JCOE
- Dr. Vaughn Whisker, Research Associate, Penn State Applied Research Labs
- Shane Tabor, Creative Director, ECS Orlando
- Kishan Shetty, Engineering Lead, JANUS Research
- John Burwell, Director Business Development, Bohemia Interactive

Virginia Beach Convention Center / Virginia Beach, VA April 25-27, 2017

Wednesday (continued)_

April 26

1215 – 1345 Lunch and Exhibit Time – Ballroom Three

1345 – 1430 Special Event – "M&S Challenge Competition Presentation" – Ballroom Three

The M&S Challenge Competition is a unique event where talented individuals use the power of M&S to solve problems important to their community, government, business or industry sector. Developers, analysts, and subject matter experts participate in this competition and demonstrate the power of M&S. The four teams selected for the finals will present their projects and answer questions from the judges. Live audience voting will be included in the scores for selecting the overall best M&S solution. All conference attendees are encouraged to attend this event and vote.

Moderator: Stefani Werner, Modeling and Simulation Software Engineer and Analyst, Newport News Shipbuilding

mas chancinge competition rindists		
Team #	Team Name	
1	Pectus Metric Tool	
2	Panda Coders	
3	Bishop Moore	
4	SKY	

M&S Challenge Competition Finalists

1430 – 1500 Technology Showcase – Ballroom Three

The Technology Showcase allows our conference attendees to learn about the latest technologies and tools being developed by M&S companies first hand. These short, focused briefs, conducted in sequence, will highlight M&S products and services, address state-of-the-art technology implementations, and describe how consumers and customers may benefit from these technologies. **Moderator:** *Rex Wallen,* Modeling and Simulation Systems Engineer, Newport News Shipbuilding

- 1500 1530 Networking and Exhibit Time Ballroom Three
- 1530 1700 Paper Session IV:

ANALYTICS AND DECISION MAKING TRACK – Room 3A (located on the second floor)

1530 - 1600	Data Sharing is a Critical Capability!
	Ralph O'Connell, Joint Staff J6
1600 - 1630	United States Coast Guard Firehouse Staffing Analysis
	CDR Chad Long, USCG
1630 - 1700	M&S Workbench – A Foundation for a Modeling and Simulation Digital Engineering
	Ecosystem
	Pauline Johnson, SimVentions

SCIENCE AND ENGINEERING TRACK – Room 2C (located on the second floor)

1530 – 1600 Realism in Modeling and Simulation with Implications of Virtual Reality, Augmented Reality and Immersive Environments

 Dr. Jeffrey Wallace, Infinite Dimensions Integration, Inc.

 1600 – 1630 Future Look – Effective Cybersecurity Using M&S

 Paul Gustavson, SimVentions, Inc.
 1630 – 1700 Data Trace Visualizations to Decipher Carrier Traffic Patterns

 Dr. Paul Koola, KBSI

Virginia Beach Convention Center / Virginia Beach, VA April 25-27, 2017

Wednesday (continued) April 26 TRAINING AND EDUCATION TRACK (1) - Room 3B (located on the second floor) 1530 - 1600 Supporting Competency-based Education and Training in Distributed Learning Environments Dr. Robby Robson, Eduworks Corporation 1600 - 1630 Developing a Collaborative Instructional Design Methodology for Studying Infectious **Disease Protocols** Dr. Sue Dass, ICF 1630 - 1700 "System of Systems" Approach for the Development of Next Generation Modular Simulation-Based Training Systems John Burwell, Bohemia Interactive Solutions TRAINING AND EDUCATION TRACK (2) – Room 2D (located on the second floor) 1530 - 1600 Experimental Correlation of Vehicle Dynamics Simulation to Self-Reported Driving, Learning and Gaming Styles Dr. Kevin Hulme, University at Buffalo

> 1600 - 1630 A Fully Immersive Virtual Reality Training System for Rocket Fuel Mixing Operations Dr. Thomas Mastaglio, MYMIC Simulations
> 1630 - 1700 Improving the Utility of Open-Source Event Data for the Design of Training Exercises Douglas Murphy, InCadence Strategic Solutions

1530 – 1930 Offsite Networking Event

Nautilus Foyer / Nautilus Balcony Hilton Garden Inn Oceanfront 3315 Atlantic Avenue Virginia Beach, VA 23451

• Pre-registration and pre-payment are required for this event

Thursday			_April 27	
0700 – 1530	Registration -	Main Lobby – Near Ballroom Three		
0700 - 0800	Continental Br	eakfast – Ballroom Three		
0800 - 0930	Paper Session	Paper Session V:		
ANAL	TICS AND DECISI	ON MAKING TRACK – Room 3A (located on the second floor)		
	0800 - 0830	Simulating the Impact of Sudarshan Kriya Yoga in Hampton Roads Dr. Saturnina Nisperos, Old Dominion University		
	0830 – 0900	Crowd Source Innovation Brian Vogt, ARCIC		
	0900 – 0930	Predictive Analytics with Advanced Bayesian Date-Fusion Surrogate Models <i>Dr. Jesper Kristensen,</i> General Electric Co.		

Virginia Beach Convention Center / Virginia Beach, VA April 25-27, 2017

Thursday (cont	inued)	April 27	
SCIENCE AND ENGINEERING TRACK – Room 2C (located on the second floor)			
	0800 - 0830	Modeling the Characteristics of Radical Ideological Growth using an Agent-Based Model Methodology	
	0830 – 0900	Paul Cummings, Krasnow Institute for Advanced Study, George Mason University Experimental Validation of a Ground Robot Simulation Model during Line Following Task	
		Dr. Yiannis Papelis, Old Dominion University	
	0900 – 0930	Rapid Unmanned Surface Vehicle Model Prototyping System	
		Melissa Periman, ODU-MSVE, Timothy Lane, ODU-MSVE, Lee Dumaliang, ODU-MSVE	
		TION TRACK: Special Session: Joint Staff J7 Training Tools – Room 3B (located on the	
second	l floor) 0800 – 0820	Joint Staff 17 Joint Training Tools for Compaign Dianning	
	0800 - 0820	Joint Staff J7 Joint Training Tools for Campaign Planning LTC Mark Madden, USA, Joint Staff J7	
	0820 - 0840	Cart Before the Horse – Leveraging Web-Based Global M&S Terrain Repositories for	
	0020 0040	Scenario Development	
		Samuel Chambers, Joint Staff J7	
	0840 - 0900	Utilizing Force Management Services (FMS) to Support Realistic Training	
		Megan Babb, Joint Staff J7	
	0900 - 0920	Utilizing Campaign Adjudication to Aid in Training for Campaign Planning	
		Amy Grom, Joint Staff J7	
	0920 – 0930	Q&A/Discussion	
VISUA		AMIFICATION TRACK – Room 2D (located on the second floor)	
	0800 – 0830	Over Sixty Years of Lying with Statistics and Visualization Dr. Andrew Collins, VMASC	
	0830 – 0900	Modeling and Economic Impact of Foot and Mouth Disease in the United States using The Paarlberg Quarterly Economic Model	
		Dawit Assefa, USDA: APHIS: VS: STAS: CEAH	
	0900 – 0930	Analysis of Team Tutoring Training Data	
		Anastacia MacAllister, Iowa State University	
0930 – 1000	Networking – E	Ballroom Three	
1000 - 1200	Protecting the	Nation Panel – Ballroom Two	
	Use and Advan	cement of M&S Technologies for Defense and Security	
	The moderated	panel discussion will highlight the innovative use of technology and data to facilitate:	
	-	ex decision making in areas such as cyber and energy security, spectrum management,	
	-	ition and interoperability	
		ced training and education, including blended and distributed learning	
		will explore advances in big data, artificial intelligence, cognitive computing, and the	
	internet of thin	-	
		DR Chris Davidson, Royal Australian Navy	
	Panel Member	-	
		Purdy, Office of Deputy Secretary of Defense, Research and Engineering	
		Ioble, Director, Navy International Agreements, Navy IPO	
		D'Neal, Director, S&T/M&S for MARCORSYSCOM	
		s Reed, M&S Deputy, Department of Navy	
	• Dr. Je <u>f</u>	ffery Temple, Senior Engineer, Naval Surface Warfare Center Dahlgren Division (NSWCDD)	

Virginia Beach Convention Center / Virginia Beach, VA April 25-27, 2017

Thursday (continued)_

April 27

1000 – 1200 Student STEM Event – Ballroom Three

The MODSIM STEM event provides the conference a unique opportunity to contribute directly to the school experience of the youth who are just beginning to formulate their dreams for the future.

During the MODSIM STEM event, approximately 100 area high school students will get the opportunity to see firsthand the world of M&S. Students will rotate through hands-on M&S demonstrations provided in the exhibit hall to see STEM in action.

1200 – 1330 Lunch, Awards, and Announcements – Ballroom Three

1330 – 1500 Special Event: Meeting of the Big Data and M&S Cabal – Ballroom Two

Anthony Cerri, Director, Data Science, Models, Simulations; TRADOC G27 OE Training Support Center (OE TSC)

Interested members of the M&S and Big Data communities are meeting to continue a cross cutting dialogue. Goals of the discussion include: integration of capabilities; supporting warfighters and support staff with training and experimentation; identifying community weld points; update on the I/ITSEC 2017 Big Data Special Event; and discussion of how to make MODSIM and I/ITSEC a 1 - 2 Big Data punch. All are invited. If you are not already engaged: come, listen and determine how you fit.

1500 – 1700 External Event: National Modeling and Simulation Coalition (NMSC) Workshop – Ballroom Two

The National Modeling & Simulation Coalition (NMSC) is an unincorporated, voluntary, nonprofit coalition sponsored by and composed of government, industrial and educational organizations and professional societies having a common interest in promoting and leveraging M&S to better the human condition and to strengthen the National well-being. The mission of the NMSC is to create a unified national community of individuals and organizations around the M&S discipline and professional practice and to be the principal advocate for M&S. This event is a meeting of the NMSC. Please join us even if you are not already a member!