

MODSIM World Conference & Expo 2017

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 – 0820 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)

John Sokolowski, President, The Society for Modeling and Simulation International

Saurabh Mittal, Vice President of Membership, The Society for Modeling and Simulation International

0820 – 0825 Scholarship Awards (pending sponsorship) – Ballroom Two

TBA

TBA

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

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 – 1000 Networking and Exhibit Time – Ballroom Three

0930 – 1830 Exhibit Displays, Challenge Competition Presentations and Demonstrations – Ballroom Three

0930 – 1830 Innovation Corner – Ballroom Three

Virtual and Mixed Reality Showcase at MODSIM World 2017

Experience how innovative Virtual and Mixed Reality applications are currently 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 mediums into a variety of verticals.

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)

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Tuesday (continued)

April 25

1000 – 1200

Special Event – Ballroom Two

“The Simulation Century” – Bringing Big Data to Life

The Simulation Century Panel presentations this year will focus on technologies like machine learning and simulation to help make big data come to life and be actionable. These brief, high impact presentations will envision how 21st century technologies will shape humanity’s future.

Moderator: *Richard Boyd*, CEO, Tanjo, Inc.

Panel Members:

- *Jennifer Arnold*, Vice President, Booz Allen Hamilton
- *Jeff Frazier*, Managing Director, Special Projects Office of the Chairman, Cisco Systems
- *Jon Kraftchick*, Vice President, Cherry Bekaert
- *Dave Rose*, Vice President, Mission Solutions, Oracle (*Invited*)

1200 –1330

Lunch and Exhibit Time – Ballroom Three

1330 – 1500

Paper Session I:

ANALYTICS AND DECISION MAKING TRACK

1330 – 1400 Data Farming and The Black Swan

1400 – 1430 A Simulation on the Effect of a Major World War on the Population of the World

1430 – 1500 Simulating Foot and Mouth Disease in the United States using the Animal Disease Spread Model

SCIENCE AND ENGINEERING TRACK

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. Reejo Mathew*, Senior Research Scientist, Software Sciences and Analytics, GE Global Research

TRAINING AND EDUCATION TRACK

1330 – 1400 Large Scale Testing and Evaluation of Virtual Environments for Infantry Soldier Tasks
Comparing Mental Effort for Live Versus Virtual Training Performance Assessments

1400 – 1430 Effectiveness of Augmented Reality and Augmented Virtuality

1430 – 1500 Evaluating Game-Based Environments for Army Aviation Collective Training

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Tuesday (continued)

April 25

VISUALIZATION AND GAMIFICATION TRACK

- 1330 – 1400 Rolling the Dice: Using Low-Cost Tabletop Simulation to Develop and Evaluate High-Value CONOPS in Uncertain Tactical Environments
- 1400 – 1430 Understanding Future Conflict Escalation Dynamics with Analytic Gaming
- 1430 – 1500 Payment Innovations

1500 – 1530 Networking and Exhibit Time – Ballroom Three

1530 – 1700 Paper Session II:

ANALYTICS AND DECISION MAKING TRACK

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.

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

- 1530 – 1600 Harmonized Air Missile Space Training Environment
- 1600 – 1630 Augmenting Model-Based Design with Human System Integration Advisor
- 1630 – 1700 More Than the Sun of Their Parts: A Case Study Learning Application Integration
- TRAINING AND EDUCATION TRACK: Special Session: Joint Staff J-7 Training Tools**
- 1530 – 1550 Cart Before the Horse – Leveraging web-Based Global M&S Terrain Repositories for Scenario Development
- 1550 – 1610 Utilizing Force Management Services (FMS) to Support Realistic Training
- 1610 – 1630 Utilizing Campaign Adjudication to Aid in Training for Campaign Planning
- 1630 – 1650 Joint Staff J7 Joint Training Tools for Campaign Planning
- 1650 – 1700 Q&A/Discussion

VISUALIZATION AND GAMIFICATION TRACK

- 1530 – 1600 Navigating Augmented and Virtual Reality Hardware Choices
- 1600 – 1630 Leveraging HTML5 and WebGL to Address Information Assurance Barriers for Simulation Based training in the U.S. Military
- 1630 – 1700 Cultivating Digital TLC – Teaching and Learning Communities

Tuesday (continued)

April 25

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1730 – 1900 Attendee Onsite Networking Event – Ballroom Three

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

0845 – 1015 Special Event – Ballroom Two
Senior Leader Panel: Title TBD
(2016) Senior Leaders within both Government and Industry will share the role that M&S has in their organizations, their perspective on the issues and impact of M&S, and discuss gaps that M&S can fill in the future. Following the opportunity to hear their insights, attendees will be able to ask questions and gain a better understanding of the issues facing these leaders; issues that M&S technology transformation can potentially address.

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

Panel Members:

- **TBD**
- **TBD**
- **TBD**
- **TBD**

1015 – 1045 Networking and Exhibit Time – Ballroom Three

1045 – 1115 VIP Technology Showcase – Ballroom Three

1045 – 1215 Paper Session III:

ANALYTICS AND DECISION MAKING TRACK

1045 – 1115 Training Equipment Life Cycle Awareness for Combat Training Centers

1115 – 1145 The Reference Model Predicts Life Expectancy for Diabetics

1145 – 1215 Creating Teaching and Learning Accountabilities through Data Analytic Feedback Loops

Wednesday (continued) _____ April 26

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SCIENCE AND ENGINEERING TRACK

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

1045 – 1115 Semantic Instrumentation of Virtual Environments for Training

1115 – 1145 Just a Shiny Object

1145 – 1215 Authoring Adaptive Tutors for Simulations in Psycho-Motor Skills Domains

VISUALIZATION AND GAMIFICATION TRACK

1530 – 1700 Panel: Navigating the Virtual and Mixed Reality Landscape of Today and Tomorrow

The number of Virtual, Augmented and Mixed Reality 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

Cory Kumm, Senior Product Manager, Bohemia Interactive

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

1015 – 1730 Innovation Corner – Ballroom Three

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Wednesday (continued)

April 26

1215 – 1345 Lunch and Exhibit Time – Ballroom Three

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1345– 1430

Special Event – “Challenge Competition Presentation” - Ballroom Three

The 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

1430 – 1500

Technology Showcase – Ballroom Three

(2016) The Technology Showcase allows 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: TBD

1500 – 1530

Networking and Exhibit Time – Ballroom Three

1530 – 1700

Paper Session IV:

ANALYTICS AND DECISION MAKING TRACK

1530 – 1600 Data Sharing is a Critical Capability!

1600 – 1630 United States Coast Guard Firehouse Staffing Analysis

1630 – 1700 M&S Workbench – A Foundation for a Modeling and Simulation Digital Engineering Ecosystem

SCIENCE AND ENGINEERING TRACK

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

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

1630 – 1700 Data Trace Visualizations to Decipher Carrier Traffic Patterns

TRAINING AND EDUCATION TRACK

1530 – 1600 Supporting Competency-based Education and Training in Distributed Learning Environments

1600 – 1630 Developing a Collaborative Instructional Design Methodology for Studying Infectious Disease Protocols

1630 – 1700 “System of Systems” Approach for the Development of Next Generation Modular Simulation-Based Training Systems

VISUALIZATION AND GAMIFICATION TRACK

1530 – 1600 Experimental Correlation of Vehicle Dynamics Simulation to Self-Reported Driving, Learning and Gaming Styles

1600 – 1630 A Fully Immersive Virtual Reality Training System for Rocket Fuel Mixing Operations

1630 – 1700 Improving the Utility of Open-Source Event Data for the Design of Training Exercises

Wednesday (continued)

April 26

1530 – 1930

Offsite Networking Event

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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 Breakfast – Ballroom Three

0800 – 0930 Paper Session V:

ANALYTICS AND DECISION MAKING TRACK

0800 – 0830 Simulating the Impact of Sudarshan Kriya Yoga in Hampton Roads

0830 – 0900 Crowd Source Innovation

0900 – 0930 Predictive Analytics with Advanced Bayesian Data-Fusion Surrogate Models

SCIENCE AND ENGINEERING TRACK

0800 – 0830 Modeling the Characteristics of Radical Ideological Growth using an Agent Based Model Methodology

0830 – 0900 Rapid Unmanned Surface Vehicle Model Prototyping System

0900 – 0930 Experimental Validation of a Ground Robot Simulation Model during Line Following Task

TRAINING AND EDUCATION TRACK

0800 – 0830 Validation Process and Use Advantages of an Avatar Guided Computer Game Based Patient Safety Program in a Large Level I Trauma Military Treatment Center

0830 – 0900 Analysis of Effective Speech Recognition in a Virtual Operating Room

0900 – 0930 Using LiDAR Technology Combined with Position-Tracking Software and the Medical Training Evaluation System (MTES) in an Integrated After Action Review System for Mobile Medical Lane Training

VISUALIZATION AND GAMIFICATION TRACK

0800 – 0830 Over Sixty Years of Lying with Statistics and Visualization

0830 – 0900 Modeling and Economic Impact Foot and Mouth Disease in the United States using the Paarlberg Quarterly Economic Model

0900 – 0930 Analysis of Team Tutoring Training Data

0930 – 1000 Networking – Ballroom Three

Thursday (continued)

April 27

1000 – 1030 Entrepreneur Competition – Ballroom Two

(2016) The Entrepreneur Competition is a unique event to showcase innovative start-up ideas in modeling

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and simulation where individuals, small teams, and small businesses compete.

1000 – 1200 Student STEM Event – Ballroom Three

1030 – 1200 “Protecting the Nation” Panel – Ballroom Two

(2016) In this panel participants will provide an overview of their Modeling and Simulation organizations, investments, and initiatives. The moderated panel discussion will highlight challenges and opportunities related to cyber defense, information sharing, capability development and acquisition.

Moderator: TBD

Panel Members:

- **TBD**
- **TBD**
- **TBD**
- **TBD**

1200 – 1330 Lunch, Awards and Announcements – Ballroom Three

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

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

Interested members of the M&S and BD communities are meeting to continue a nascent dialogue already showing exponential growth. Goals include: integration of capabilities, creating a previously impossible approach to supporting all the 450K E1s through O10s, and all the folks who support them with training, experimentation, testing and the like, networking to assist the communities finding weld points, discussion of ongoing initiatives, discussion on how to make MODSIM and I/ITSEC a 1 - 2 step punch to keep the momentum and update on the I/ITSEC 2017 Big Data Special Event.

All are invited. If you are not already engaged: come, listen and determine how you fit. Anyone who is aware of an ongoing effort SHOULD attend in order to update the growing compendium of work; let's not reinvent the wheel.

1500 – 1700 National Modeling and Simulation Coalition (NMSC) Workshop

1500 – 1700 Hampton Roads GOV2COM Market Challenge