

MODSIM World Conference & Expo 2018

Norfolk Marriott Waterfront / Norfolk, VA

April 24-26, 2018

Monday _____ April 23

1300 – 1700 Exhibitor Move-In – Norfolk Ballroom

1500 – 1700 Registration – Main Lobby – Norfolk Ballroom

Tuesday _____ April 24

0700 – 1730 Registration – Main Lobby – Norfolk Ballroom

0730 – 0830 Continental Breakfast – Norfolk Ballroom Lobby

0830 – 0845 **MODSIM World 2018 Welcome and Opening Remarks – Norfolk Ballroom**
Dr. Benjamin Bell, Eduworks Corporation, MODSIM World 2018 Conference Chair
RADM James Robb, USN (Ret), President, National Training and Simulation Association (NTSA)

Introduction of Congressional Keynote Speaker – Norfolk Ballroom
RADM James Robb, USN (Ret), President, National Training and Simulation Association (NTSA)

0845 – 0900 **Congressional Keynote Address – Norfolk Ballroom**
Rep Bobby Scott, (VA-03)

0900 – 1000 **Introduction of Industry Keynote Speaker – Norfolk Ballroom**
Dr. Benjamin Bell, Eduworks Corporation, MODSIM World 2018 Conference Chair

Industry Keynote Address – Norfolk Ballroom
“Learning Engineering: The Missing Discipline”
Dr. Robby Robson, CEO, Eduworks Corporation and Vice Chair of IEEE Learning Technology Standards Committee

0930 – 1830 **Exhibit Hall and Innovation Corner Hours– Norfolk Ballroom**

Innovation Corner: Virtual and Mixed Reality Showcase at MODSIM World 2018

In conjunction with the Innovation Panel @ MODSIM, the Innovation Corner is dedicated to demonstrating technologies that are pushing the envelope. We're packing VR, Haptics and Genetic Engineering into the Innovation Corner for 2018. Stop by, check out the demos and chat with Innovation Panel speakers at this unique event.

Demonstrations:

- **NIH MERRTT and FVCT Haptics Demonstration:** JANUS Research
- **CRISPR Synthetic Biology Demo:** Plas.md
- **HoloJOC HoloLens Joint Operations Center:** Engineering and Computer Simulations
- **AR/VR Solutions for Air Crew Training:** Bohemia Interactive

1000 – 1030 **Networking Break and Dedicated Exhibit Time – Norfolk Ballroom**

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Tuesday (continued)

April 24

1030 – 1200

Special Event – Norfolk Ballroom

“The Simulation Century” – The Leap from Big Data to Immersive Intelligence

Our sixth annual session will address the growing issue of managing the human/ machine interface as we hurtle towards the Singularity. We will continue our discussion of how to achieve fluency with smarter balance between humans and machines to optimize outcomes. The Simulation Century Panel presentations this year will focus on technologies that immerse us more deeply in digital simulations.

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

Panel Members:

- *Richard Boyd*, CEO Tanjo, “Synthetic Populations”
- *David Smith*, CEO Vision, “The Future of VR/AR”
- *Stephanie Trunzo*, VP, Globant, “The Enterprise Digital Journey”
- *Jason Jerald*, Co-Founder, NextGen Interactions, “Prototyping Technologies using Today’s VR”
- *Mike Conlow*, Head of Technology Consulting, Blue State Digital, “Machine learning and simulation: coming to an election near you”

1200-1330

Lunch and Dedicated Exhibit Time – Norfolk Ballroom

1330 – 1500

Paper Session I:

ANALYTICS AND DECISION-MAKING TRACK – (located on the fourth floor)

Panel: Big Data, High Performance Computing, and Simulation

Big data is...well...getting bigger. Bigger in size, bigger in business impact, and bigger in the infrastructure required to mine data and run artificial intelligence models. High performance computing (HPC) emerged in the 1960s as a way for a single computer to process information faster. They enabled better weather forecasting and aerodynamic research. Seymour Cray quipped, “If you were plowing a field, which would you rather use: Two strong oxen or 1,024 chickens?” Fifty years later, supercomputers run molecular dynamics simulations based on massively parallel processing on many smaller, but capable, clusters. History reveals the response to Cray’s question, “1,024 chickens, please.” Using multiple clusters is the essence of modern computing. They are also present in our laptops. This panel will discuss the current state of HPC as well as future trends. Panelists will share their perspectives on how HPC is affecting their sectors – giving attendees an opportunity to consider their own enterprises in light of growing access to HPC resources.

Moderators:

- *Jay Gendron*, Associate Data Scientist, Booz Allen Hamilton
- *Dr. Eric Weisel*, Acting Executive Director, Virginia Modeling, Analysis & Simulation Center

Panel Members:

- *John Carl*, Director, Army Account Group, Booz Allen Hamilton
- *Dr. Michael Goodrich*, Model Builder, USAA
- *Dr. Sunita Dodani*, Founding Director, EVMS-Sentara Healthcare Analytics and Delivery Science Institute (HADSII)
- *Rusty Waterfield*, Associate Vice President for University Services & Chief Information Officer, Information Technology Services, Old Dominion University (Invited)

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SCIENCE AND ENGINEERING TRACK – (located on the fourth floor)

- 1330 – 1400 A Multi-Level Universal Specification for Intelligent Characters (MUSIC)
1400 – 1430 System Engineering: Optimizing Creation of Conversational Virtual Human Avatars
1430 – 1500 Reduction of Language Model Data Bases: Overcoming Chabot Implementation Obstacles

TRAINING AND EDUCATION TRACK – (located on the fourth floor)

- 1330 – 1400 Existential Correlation of System Complexity and Task Complexity: Lessons Learned from Problem Solving F-1 Combustion Instability
Ronald Freeman, American Institute of Aeronautics and Astronautics, Orange County Section
1400 – 1430 Evolution of Green Pig: Best Practices in Mobile App Design
1430 – 1500 The Challenge of Designing Instructionally Sound Virtual Reality-Based Training

VISUALIZATION AND GAMIFICATION TRACK – (located on the fourth floor)

- 1330 – 1500 Visualizing and Simulating on Whole World Terrains
1400 – 1430 Graphical Representations Provide Insight into Life Cycle Planning Through Data Analytics
1430 – 1500 Visualization of the Process Interaction Worldview in Discrete Event Simulation

1500 – 1530 Networking Break and Dedicated Exhibit Time – Norfolk Ballroom

1530 – 1700 Paper Session II:

ANALYTICS AND DECISION-MAKING TRACK – (located on the fourth floor)

- 1530-1600 Tourism, Big Data, and the Restaurateurship: Does Modeling and Simulation Have a Seat at the Table?
Jay Gendron, Associate, Booz Allen Hamilton
1600-1630 The VCS C-Seam Analytics Platform: A Monte Carlo Approach to Machine Learning
Andrew Turscak
1630-1700 A Sustainability Assessment Model for Crop Rotation Alternatives
Saturnina Nisperos

SCIENCE AND ENGINEERING TRACK – (located on the fourth floor)

- 1530 – 1600 Leveraging Commercial Game Engines for Multi-Domain Image Generation
1600 – 1630 Simulation-Based Design Optimization of a Propulsion System for an Unmanned Surface Vehicle
1630 – 1700 Preventing Premature Death in the M&S Lifecycle: Lessons Learned from Resurrection and Modernization of a Space System Contamination Model

TRAINING AND EDUCATION TRACK – (located on the fourth floor)

- 1530 – 1600 Assessing Performance and Usability of 3D Visualization Technologies for Anatomical Training
1600 – 1630 Ready, Aim, Perform! Targeted Micro-Training for Performance Intervention
1630 – 1700 Walking a Mile in Simulated Shoes: Development of an Assessment of Perspective Taking

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VISUALIZATION AND GAMIFICATION TRACK – (located on the fourth floor)

1530 – 1630 **Track Keynote: Total Learning Architecture and Game Based Training**
Dr. Shane Gallagher, Learning Scientist/Sr. Researcher, Institute for Defense Analyses

1630 – 1700

1715 – 1900 **Attendee Onsite Networking Event – Norfolk Ballroom**
Welcome Remarks: Dr. Benjamin Bell and Event Sponsor, VMASC Industry Association

Wednesday _____ April 25

0700 – 1730 **Registration – Main Lobby – Norfolk Ballroom**

0730 – 0830 **Continental Breakfast – Norfolk Ballroom**

0830 – 0845 **MODSIM World 2018 Day Two Opening Remarks – Norfolk Ballroom**
Matt Spruill, Chairman, Virginia Modeling and Simulation Partnership (VMSP)

Introduction of Senior Leader Panel – Norfolk Ballroom
Dr. Benjamin Bell, Eduworks Corporation, MODSIM World 2018 Conference Chair

0845 - 1000 **Special Event – Norfolk Ballroom**
Senior Leader Panel: Executing a Digital Strategy
Senior Leaders from Government and Industry will share their insights on successfully executing a digital strategy, which includes the integration of M&S into an organization's core value chain. Panel will discuss the critical elements that make up a digital strategy. 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:

- **Dr. Patrick Lincoln**, Computer Science Laboratory, SRI International
- **Dr. John Tangney**, Division Director, Office of Naval Research
- **Dr. James Moreland**, Acting DASD (Tactical Warfare Systems) & Director, Naval Warfare, OSD AT&L
- **Dr. Sae Schatz**, Director, Advanced Distributed Learning Initiative

0930 – 1530 **Exhibit Hall and Innovation Corner Hours – Norfolk Ballroom**

Innovation Corner: Virtual and Mixed Reality Showcase at MODSIM World 2018

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- **AR/VR Solutions for Air Crew Training:** Bohemia Interactive

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1000 - 1030 Networking Break and Dedicated Exhibit Time – Norfolk Ballroom
VIP Technology Showcase

1030 - 1115 Introduction of Government Keynote Speaker – Norfolk Ballroom
Dr. Benjamin Bell, Eduworks Corporation, MODSIM World 2018 Conference Chair

Government Keynote Speaker – Norfolk Ballroom
Mr. Robert Burns, Deputy Director, Homeland Security Intelligence Advanced Research Projects Agency

1115 - 1200 Introduction of Defense Keynote Speaker – Norfolk Ballroom
RADM James Robb, USN (Ret), President, National Training and Simulation Association (NTSA)

Defense Keynote Speaker – Norfolk Ballroom
BG Mark Odom, Director, Concept Development and Learning Directorate, Army Capabilities Integration Center, U.S. Army TRADOC

1200 – 1330 Lunch and Exhibit Time – Norfolk Ballroom

1300 - 1330 Special Event – “M&S Challenge Competition Presentation” – Norfolk Ballroom
The M&S Challenge Competition is a unique event where talented teams 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. Finalists will present their projects and answer questions from the judges. All conference attendees are encouraged to remain following the luncheon to observe this event.

1330 – 1500 Paper Session III:

ANALYTICS AND DECISION-MAKING TRACK – (located on the fourth floor)

1330 – 1400 Shifting Data Collection from a Fixed to an Adaptive Sampling Paradigm
Dr. Erik Axdahl

1400 – 1430 The Last Mile in Analytics and Decision Making

1430 – 1500 A Genetic Model for the Evolution of Complex Technologies and its Application to Economic Development

SCIENCE AND ENGINEERING TRACK – (located on the fourth floor)

1330 – 1400 IoT Applied to the Control and Monitoring in Substations

1400 – 1430 Modeling of the Ionosphere Reveals Wide Bandwidth Available for a Virtual SATCOM Communication System

1430 – 1500 A Versatile Simulation Framework for Elastodynamic Modeling of Structural Health Monitoring

TRAINING AND EDUCATION TRACK – (located on the fourth floor)

1330 – 1430 Track Keynote: Advanced Learning Concepts
Jeff Raver

1430 – 1500 Training to Fight in a Denied, Degraded, and Disrupted Space Operational Environment

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VISUALIZATION AND GAMIFICATION TRACK – (located on the fourth floor)

1330 – 1400 Automated Generation of Holographic Heart from Coronary Tomography for Medical Diagnostics

1400 – 1430 Technology Acceptance of a Virtual Tactical Combat Casualty Care Simulation
Matthew Hackett, Science and Technology Manager, Army Research Laboratory

1430 – 1500 Child-Centric Interactive Exercise Devices (CCIED) and System for Conductive Education Therapy

1500– 1530 Networking Break and Dedicated Exhibit Time – Norfolk Ballroom

1530 – 1700 Paper Session IV:

ANALYTICS AND DECISION-MAKING TRACK – (located on the fourth floor)

1530 – 1600 The Application of Data Farming and Wargaming to Coalition Decision-Making

1600 – 1630 Simulation Based Leadership Decision Support Simulator for Countering Weapons of Destruction

1630 – 1700 The Acquisition System is Broken - But Not for the Reasons You Think

SCIENCE AND ENGINEERING TRACK – (located on the fourth floor)

1530 – 1630 Track Keynote

Dr. Robert Moses, Program Manager, Medical Simulation, General Dynamics Information Technology

1630 – 1700 Use of Real-Time, Predictive Human Modeling for Spatial Disorientation Detection and Mitigation

TRAINING AND EDUCATION TRACK – (located on the fourth floor)

1530 – 1600 A “Stories-as-a-Service” Architecture for Enriching Training Simulations

1600 – 1630 Validating Simulators for Live, Virtual, Constructive Exercises: A Methodology

1630 – 1700 A Taxonomy for the Evaluation of Training Simulations and Environments

VISUALIZATION AND GAMIFICATION TRACK – (located on the fourth floor)

1530 – 1600 Benefits of Applying Virtual and Augmented Reality to the Test and Evaluation of Autonomous Vehicles

1600 – 1630 Evaluating the Applicability of Repurposed Entertainment Virtual Reality Devices for Military Training

1630 – 1700

1730 – 1930 Offsite Networking Event

The Harbor Club at Waterside District

Come network with other MODSIM attendees! The event will be held on the second floor of the Harbor Club, with an open, lively atmosphere and floor to ceiling windows. You can also choose to spend your evening outside on the terrace and enjoy unmatched views of the Elizabeth River while enjoying warm fire pits!

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

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Thursday _____ April 26

0800 – 1200 Registration - Main Lobby – Norfolk Ballroom

0730 - 0830 Continental Breakfast – Norfolk Ballroom

0830 - 1000 Defense and Homeland Security Panel – Norfolk Ballroom

“Use and Advancement of M&S Technologies for Defense and Security”

This moderated panel discussion will highlight the innovative use of technology and data to facilitate:

- Complex decision making in areas such as cyber and energy security, spectrum management, acquisition and interoperability
- Advanced training and education, including blended and distributed learning
- Advances in big data, artificial intelligence, cognitive computing, and the internet of things.

Moderator: *LCDR Chris Davidson*, Royal Australian Navy

Panel Members:

- **Dr. Van Brewer**, External R&D Principal, Advanced Distributed Learning (ADL) Initiative
- **Dr. Syed Mohammad**, Director, HSARPA Modeling and Simulation
- **Dr. David Fautua**, Chief, Individual Training & Learning, Deployable Training Division, Joint Staff J7
- **Brian Vogt (LTC, USA)**, NATO Allied Command Transformation

1000 - 1030 Break and Networking (located on fourth floor)

1000 – 1200 STEM Event - Norfolk Ballroom

1030 – 1200 Paper Session V:

ANALYTICS AND DECISION-MAKING TRACK - (located on the fourth floor)

1030 – 1100 Rapid Analysis of Simulation Outputs for Use in Emergency Preparedness in Animal Disease Outbreaks

1100 – 1130 Visualization and Pre-Processing of Intensive Care Unit Data Using Python Data Science Tools

Jacob Barhak

1130 – 1200 Simulation-Based Evaluation of Medical Workstations Designed for Human Space Exploration

TRAINING AND EDUCATION TRACK - (located on the fourth floor)

1030 – 1100 Enhancing Trainee Immersion with Goal-Directed, Reactive Populations and Realistic Surroundings

1100 – 1130 Critical Thinking Training: Proven New Technologies for Engaging DoD Personnel

1130 – 1200 An Immersive Approach to Providing Mishap Awareness Scenario Training for Ensuring Readiness (MASTER)

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Thursday (continued) _____ April 26

VISUALIZATION AND GAMIFICATION TRACK - (located on the fourth floor)

Innovation Panel @ MODSIM:

In 2017, the Innovation Panel @ MODSIM examined how Virtual, Augmented and Mixed Reality technologies were poised to change modelling and simulation in verticals such as Defense, Healthcare and beyond. In 2018, we'll discuss how these technologies have evolved over the past twelve months, if they've lived up to the hype and what the future holds. In addition to XR, we'll look at how ambient computing and voice assistants are opening new doors for immersive training. Join us for a wide ranging panel where we will look at the landscape of XR and ambient computing while discussing best practices for leveraging these powerful new tools in simulation.

Moderator: *Vance Souders*, CEO, Plas.md

Panel Members:

- *Shane Tabor*, Creative Director, ECS
- *Kishan Shetty*, Principal Engineer, Janus Research
- *John Burwell*, Business Development, Bohemia Interactive

1200 – 1330 **Lunch and Networking Break – Norfolk Ballroom**

1330 - 1500 **Facilitated Brainstorming : Simulation for the Common Man: How do We Make M&S Accessible?**

Given the power of insight and learning that simulation provides, you might question why simulation is not more widely used. This facilitated interactive brainstorming discusses this question and others to try and understand how our M&S community can reach new users and decision makers. Part of our goal is to try and understand what our equivalent to the "got milk?" slogan would be. All attendees welcome.