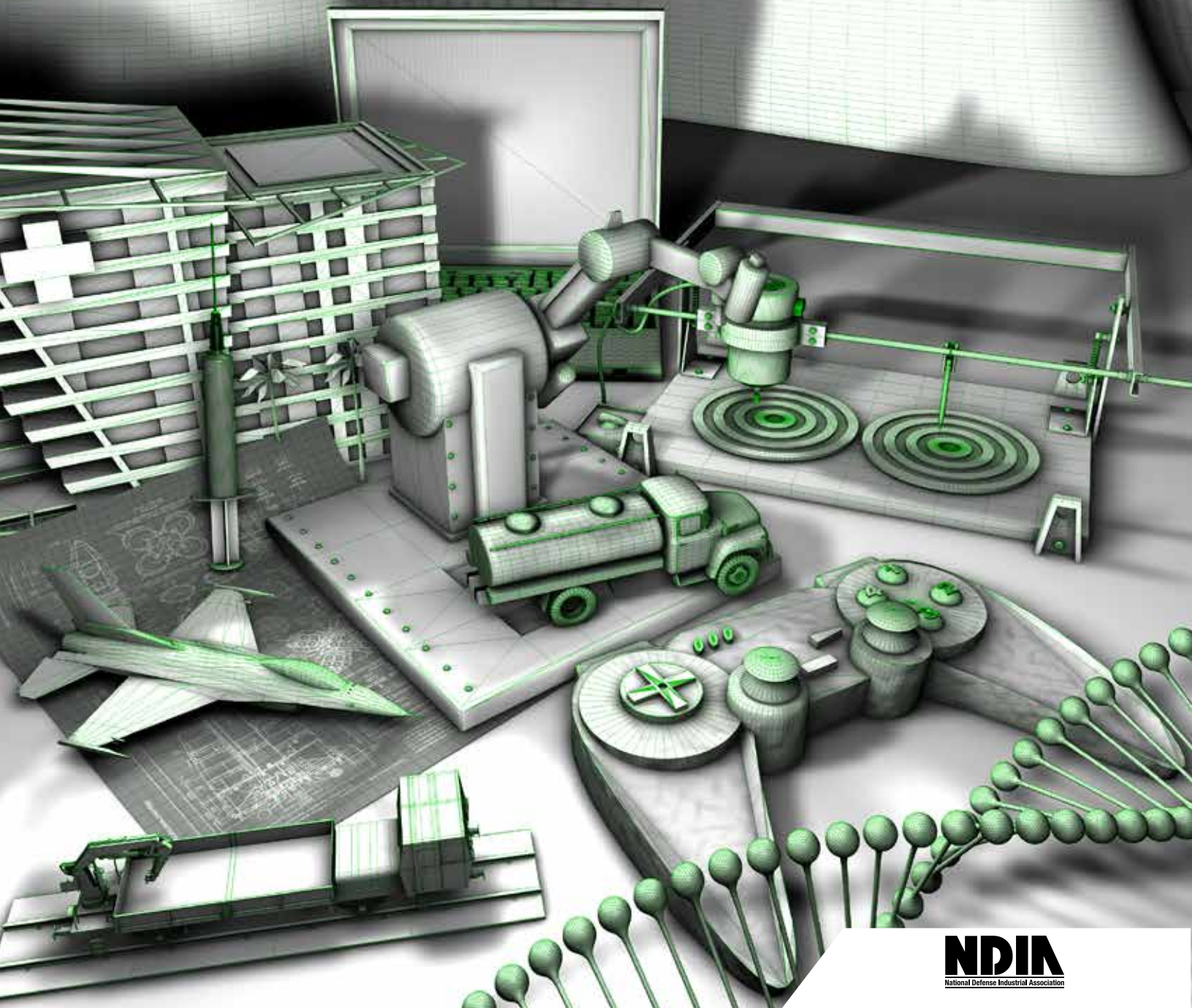nTsa

VIRGINIA BEACH, VA • MARCH 31 – APRIL 2, 2015

MODSIM WORLD 2015
REACHING THE COMMUNITIES OF M&S

NDIA
National Defense Industrial Association

WWW.MODSIMWORLD.ORG

About MODSIM World

MODSIM WORLD is a multi-disciplinary international Modeling and Simulation (M&S) conference that provides a unique opportunity to learn about new M&S applications and practices across diverse domains.

MODSIM WORLD began in 2007 with the creation of the Center for Public and Private Partnership (CP3), a non-profit corporation that drew membership from the M&S industry and community leaders in Hampton Roads, Virginia. CP3 saw the interest and need to share information about the vast amount of M&S based development occurring in the Hampton Roads area, including work based at Joint Forces Hampton Roads, Virginia Modeling, Analysis and Simulation Center (VMASC), Eastern Virginia Medical School (EVMS), NASA Langley Research Center, and many other regional government, academic, and industry organizations. Now sponsored and managed by the National Training and Simulation Association (NTSA), MODSIM has been annually since.

Specific focus areas of the conference vary from year to year, based upon current events and interest level. The 2015 conference tracks are Training and Education, Analytics and Decision Making, Science and Engineering, and Visualization and Gamification. Additionally, in 2015, we offer the themes, Protecting the Nation, Better Living through Simulation, Build It and Ship It, Keeping the Lights On, and Lifelong Learning.

MODSIM VISION
MODSIM World will become the premier international conference and exposition for collaboration and transfer of M&S knowledge, new research, development and applied technology across all public and private sectors.
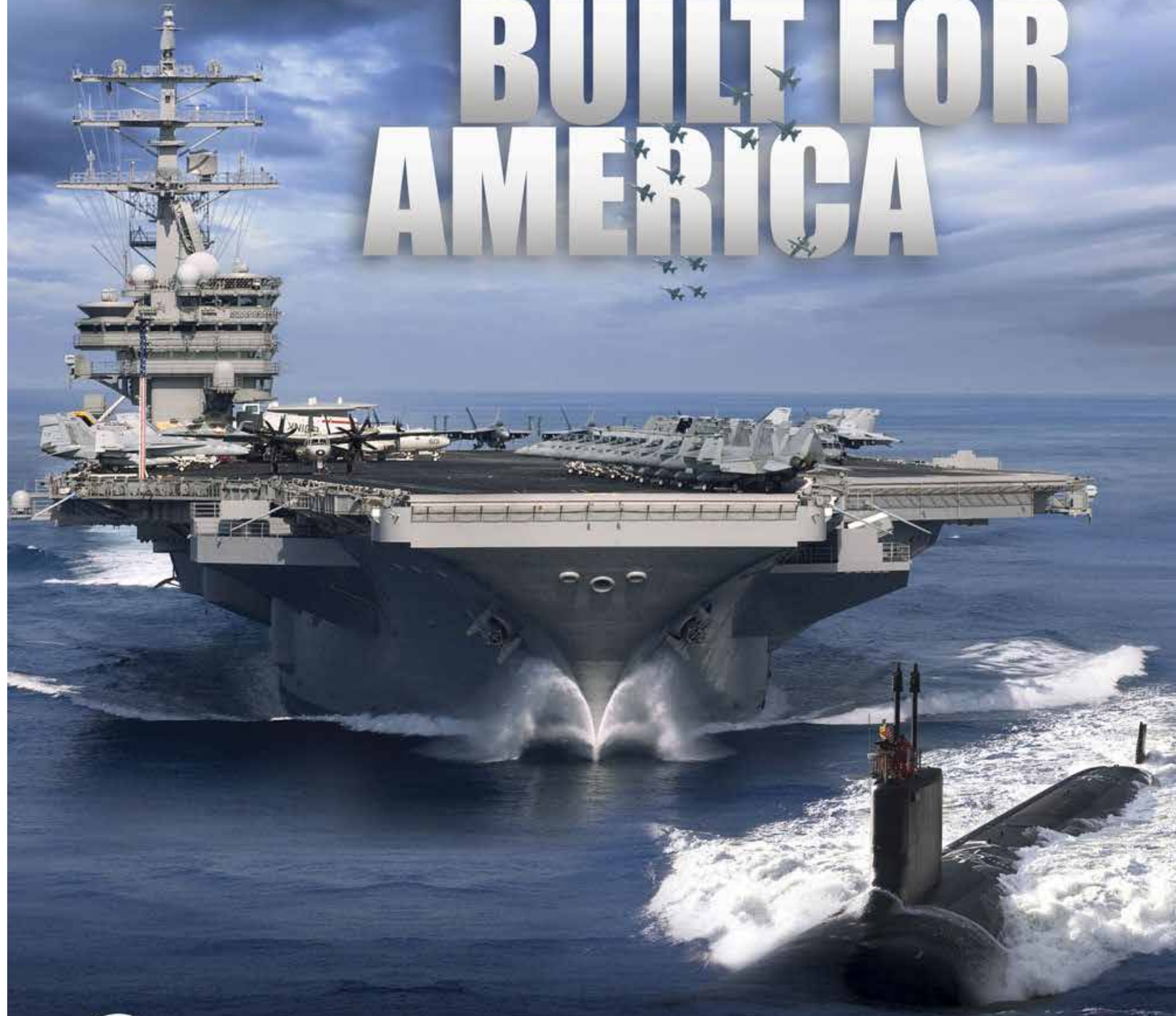
MODSIM MISSION
- To promote the initiation, development and research of M&S among all organizations internationally.

- To share the latest technical expertise, knowledge, applications and capabilities of simulation technology by academia, industry and government.

- To promote cooperation among academia, industry and government, applying M&S technologies to help organizations anticipate and prepare for the future.

- To improve M&S technology to reduce its implementation cost by academia, industry and government.

- To support planning, decision-making and real time operations management with state-of-the-art computer software and development expertise utilizing modeling and simulation.

- To foster the transfer of leading edge simulation technology and knowledge from the military community to the medical, transportation, homeland security and other applicable communities.

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BUILT IN NEWPORT NEWS
BUILT FOR AMERICA

Dear MODSIM World 2015 attendees,

On behalf of the MODSIM World leadership committee, I would like to welcome everyone to this year's conference! Regardless of which industry one works in, all are likely feeling the pressure of a challenging and constantly changing business environment. We live in a time of shrinking budgets, shorter timelines and new business models, all of which call for new approaches and technologies. With every challenge comes an opportunity to evolve and emerge better than before. Modeling and Simulation (M&S) has been widely recognized as the discipline that allows designing, testing, improving, and training virtually. These changes have allowed for a realization of cost and time savings, as well as a reduction of risk.

Our theme this year is Reaching the Communities of M&S! This theme embodies our goal, which is to reach ALL of the communities of M&S, so that all of the different factions within government, industry, and academia may learn about the many different M&S capabilities and communities that exist throughout the United States and the World! There are many people within these three arenas that have some incredible capabilities but do not necessarily communicate with others about those capabilities. Our goal is to get all of these people in the same rooms discussing their capabilities in order to share awareness and leverage other capabilities.

Our MODSIM World planning team has worked extremely hard to ensure that this year's program contains all of the elements needed to accurately reflect the current business environment within industry, academia and government. We constantly strive to create an environment where industry has access to the decision makers and the decision makers are exposed to all of the new and innovative solutions that industry has to offer. We are bringing back last year's Entrepreneur Competition and Technology Showcase in order to highlight new technologies and simulation-based solutions as well as share lessons learned across industry.

Our first keynote speaker, on Tuesday morning, will be Governor Terry McAuliffe, the 72nd Governor of Virginia. Governor McAuliffe has been in office since January 2014 and he will discuss some of the M&S initiatives in Virginia. Our second keynote speaker, on Wednesday morning, is Dr. David E. Bowles, Acting Center Director at NASA's Langley Research Center, Hampton, VA. Dr. Bowles will discuss M&S related activities within NASA.

Our first panel is led by Mr. Richard Boyd, an entrepreneur who over the last twenty three years has led and helped create some of the most innovative game technology companies in the industry. He returns this year with his third Simulation Century event. This exciting panel will highlight the evolution of and the changing role of Modeling and Simulation in shaping the future. Our second panel will be the Senior Leader panel moderated by Rear Admiral James Robb, the President of NTSA. This distinguished panel contains flag level civilians from the Pentagon, Joint Staff, Department of the Navy, NASA, and the Virginia Port Authority. These senior individuals will address M&S capabilities and initiatives within their respective areas of expertise.

Due to overwhelming support from last year, we will again be holding the Entrepreneur Competition. Like last year, individuals, small teams, and existing businesses will compete online and at the conference in front of a panel of distinguished judges and a live audience for a chance to win a cash prize. Contestants must have a M&S based product or service that has the potential to grow to a significant size and value. The focus of the competition is on the business potential of the idea. Other events will be aimed at reinvigorating and growing major industries, including manufacturing, transportation, medical, energy, testing and training. The Technology Showcase will also be offered again. Held in the Exhibit hall, this event places select exhibitors front and center to demonstrate the latest in M&S technology advancements.

We are offering four workshops on Thursday morning that are sure to please. Our hard working theme chairs are leading the workshops in Manufacturing, Defense, Healthcare, and Energy. We also bring in the younger generations and the future of the M&S industry to participate in a STEM event on Thursday in order to get them excited about this field and the opportunities for their future.

In the program, there is a graphic created by our Program Chair, Dr. Eric Weisel, which depicts the tracks and themes and corresponding workshops. The color coding in this graphic corresponds to the program and it can help guide one to attend only the most relevant paper sessions throughout the week. The track and theme chairs are all listed in the program, so if you have any questions and you can't find Eric or me, please seek out one of them and they would be glad to help!

I would like to thanks NTSA and our amazing team of volunteers who have worked tirelessly throughout the year to bring you this great event. We hope that you enjoy the dynamic program, gain an expanded awareness of M&S capabilities, and meet many other professionals and experts with whom you will have future success. Please enjoy the conference and come back and see us again in 2016!

Sincerely,

Jeanine McDonnell Zubowsky

2015 Conference Chair

Keynote Speakers

THE HONORABLE TERRY MCAULIFFE, GOVERNOR OF THE STATE VIRGINIA

The Honorable Terry McAuliffe is the 72nd Governor of Virginia. Since being sworn-into office, Governor McAuliffe has aggressively focused on building a new Virginia economy.

Whether traveling to Bedford or Beijing, Governor McAuliffe has made it clear that his number one priority is economic development and he is working hard to create and maintain jobs throughout the Commonwealth.

The Governor is also working to restore trust in government. On his first day in office, he signed an executive order imposing a $100 gift ban on himself, his family, and members of his administration and their families. He established through executive order the Commission on Integrity and Public Confidence in State Government, which will focus on ethics oversight and enforcement, limits on gifts and loans, rules on conflicts of interest, disclosure requirements and post-public service restrictions.

McAuliffe has proven that his administration will be smart stewards of Virginia's transportation dollars. Demonstrating his commitment to bipartisanship, he worked with Republican leadership on House Bill 2 to prioritize transportation projects based on what is best for Virginia's commuters not politicians. He followed through on his commitment to lowering the downtown/midtown tunnel tolls to alleviate the burden on Hampton Roads residents, commuters, and businesses. He eliminated the EZ Pass maintenance fee for all Virginia commuters, and suspended work on Route 460, because he does not believe that Virginia taxpayers should be spending hundreds of millions of dollars on a road when we don't have permits to ensure its completion. Governor McAuliffe also worked with the Governor of Maryland and the Mayor of the District of Columbia to invest $75 million in our regional metro system – taking cars off the roads and relieving congestion.

Governor McAuliffe understands that in order to compete for the jobs of tomorrow, it is essential that we make key investments today. The Governor signed legislation increasing the amount of Virginia qualified research and development expenses that can now be claimed as a tax credit. This legislation is important because it encourages private companies to invest in the jobs of the future.

In order to ensure that Virginia continues to have the best workers in the world, Governor McAuliffe understands that Virginia must continue to have a world-class education system. This year, he was proud to sign standards of learning reform legislation, to make Virginia's education system work better for students, teachers, and our schools.

Virginia is home to approximately 800,000 veterans, and the Governor is committed to fighting for those who have so bravely served our country. He expanded the Virginia Values Veterans initiative, which encourages employers to recruit, hire, train, and retrain our veterans. He also signed legislation to provide unemployment compensation to military spouses who leave their job to accompany their spouse to a new military assignment in another state, as well as legislation that will expand access to higher education for eligible veterans' family members.

In July 2014, Governor McAuliffe signed Executive Order 23 Establishing the New Virginia Economy Workforce Initiative. With a goal of an additional 50,000 credentials, aligning the workforce supply with demand and giving experience credit to our veterans, Governor McAuliffe wants to redesign our current workforce system to work with the needs of our communities and businesses.

The Governor's administration has made unprecedented progress on the restoration of rights to rehabilitated felons who have served their time. People who have paid their debt to society should be able to work, pay taxes and vote.

Governor McAuliffe ran for office to fight for uninsured Virginians and that is why he took bold executive action to expand health care. His plan, A Healthy Virginia, will help improve the lives of more than 200,000 Virginians by expanding access to care, improving care for veterans and for those with severe mental illness, and enhancing value and innovation across our health system.

Governor McAuliffe previously served as Chairman of the Democratic National Committee from 2001 to 2005, was co-chairman of President Bill Clinton's 1996 re-election campaign, and was chairman of Hillary Clinton's 2008 presidential campaign.

He and his wife Dorothy were married in 1988 and have five children.

The Governor attended Catholic University and Georgetown Law School.

DR. DAVID E. BOWLES, ACTING CENTER DIRECTOR, NASA LANGLEY RESEARCH CENTER

Dr. David E. Bowles is the Acting Center Director at NASA's Langley Research Center, Hampton, VA. NASA Langley, founded in 1917, is the nation's first civilian aeronautical research facility and NASA's oldest field center.

When he served as the Associate Director, Dr. Bowles was the Center Director's chief operating officer and senior advisor on institutional administration, and manages day-to-day operations with a focus on meeting the Center's commitments.

Dr. Bowles served as director of Langley's Exploration and Space Operations Directorate from 2007 until being selected as Associate Director in March of 2012. In this position he had overall management responsibility to identify opportunities, define implementation strategies, and deliver on mission commitments in support of the needs of NASA's Human Exploration & Operations Mission Directorate, and the Office of Chief Technologist's Space Technology Program.

Prior to serving as Langley's Director of Exploration and Space Operations, Dr. Bowles had spent 11 years involved with program and project management for both aeronautics and space related activities at the Center, including serving as Manager for the Airframe Structures Integrity and Composites elements of NASA's Advanced Subsonic Technology Program, and as the Vehicle Systems Research & Technology Project Manager of NASA's Next Generation Launch Technology Program.

A NASA Langley employee since 1980, Dr. Bowles began his career conducting research in the area of advanced materials for use on aerospace vehicles. His field of specialization was the response of composite materials in the space environment, and he has published numerous research papers concerning the effects of materials degradation on structural and thermal properties.

Dr. Bowles earned bachelor's, master's and doctoral degrees in engineering mechanics from Virginia Polytechnic Institute and State University in 1978, 1980 and 1990, respectively. The recipient of numerous awards, He's received NASA's Outstanding Leadership Medal in 2005. He lives in Suffolk, Va., with his wife Michele and they have three children.

Agenda by Date and Time

MONDAY MARCH 30

1:00   **Golf Outing** - Redwing Lake Golf Course

1:00 – 5:00   **Exhibitor Move-In** - Ballroom Three

1:00 – 5:00   **Registration** - Main Lobby - Near Ballroom Three

TUESDAY MARCH 31

6:30 – 5:00   **Registration** - Main Lobby - Near Ballroom Three

6:30 – 8:00   **Continental Breakfast** - Ballroom Three

8:00 – 8:10   **Welcome and Opening Remarks** - Ballroom Two
Mrs. Jeanine McDonnell Zubowsky, Vice President, Command Post Technologies
RADM James Robb, USN (Ret), President, National Training and Simulation Association (NTSA)

8:15 – 8:40   **Keynote Speaker** - Ballroom Two
The Honorable Terry McAuliffe, Governor of Virginia

8:40 – 8:45   **Scholarship Awards** - Ballroom Two
Mr. Richard Allen Garren
Mr. Spencer Smith

8:45 – 10:00   **Special Event** - Ballroom Two
"The Simulation Century" - The Era of Thinking Machines
This is our third annual session to 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 simulations, achieving the right blend of man and machine to optimize outcomes. The Simulation Century Panel presentations will focus on the growing importance of simulation in a wide variety of fields from healthcare and education to government and military. These brief, high impact presentations will envision how 21st century simulation will shape humanity's future.
Moderator: *Mr. Richard Boyd*, CEO, SZL.IT, Inc.
Presentations and Speakers:
      Mr. Richard Boyd, CEO, SZL.IT, "Everyone Can Be Bruce Wayne, Part 2"
      Dr. Zeeshan Usmani, CTO and Founder, Predictify.me Inc., "Searching the Future"
      Mr. Stuart Bullard, Founder, UAVSA, "Human Drones"
      Mr. Richard Spangler, Co-Founder, The PlazaBridge Group, "Business Continuity and Resiliency Planning"
      Dr. Chris Hazard, Founder, Hazardous Software, "Trust Between Man and Machine"

10:00 – 7:00   **Exhibit Displays and Demonstrations** - Ballroom Three

10:00 – 10:30   **Break and Exhibit Time** - Ballroom Three

10:30 – 12:00   **Special Event** - Ballroom Two
Senior Leader Panel
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, National Training and Simulation Association
Panelists: *Mr. Thomas C. Irwin,* SES, Executive Director, Joint Training, JS J7
                    Mr. Frank DiGiovanni, SES, Director, Force Readiness and Training
                    Mr. Dennis Reed, Deputy, Department of the Navy Modeling & Simulation
                    Dr. Danette Allen, Chief Technologist for Autonomy, NASA Langley Research Center
                    Mr. Joe Ruddy, Chief Innovation Officer, Virginia Port Authority

12:00 – 1:30   **Lunch and Exhibit Time** - Ballroom Three

1:30 – 3:00   Paper Session: **Analytics and Decision Making Track** - Room 2A
Track Keynote Speaker
Dr. Andrew Collins, Associate Professor, VMASC

Foreign Fishing Vessel (FFV) Impact Analysis

LT Elizabeth Denicola, USCG and LCDR Blair Sweigart, USCG

Object Oriented Population Generation

Dr. Jacob Barhak

1:30 – 3:00   Paper Session: **Training and Education Track** - Room 2B
Track Keynote Speaker (one hour session)
Mr. Jose Vazquez, Department of Homeland Security (DHS)

Everything I Ever Needed to Know About Simulation and Training I Learned from Ender's Game

Mr. William Pike, Mr. Mark Mazzeo and Dr. Sae Schatz

1:30 – 3:00   Paper Session: Science and Engineering Track - Room 2CD

Employing High Performance Computing to Realize a Cyber Quick-Reaction Training Environment

Mr. Brian Castello, Mr. John Tran, Mr. Douglas Hire, Mr. Robert Lucas and Mr. Ke-Thia Yao

Credibility of Modeling and Simulation via Triangulation

Dr. Mariusz Balaban

Generating Large Deterministic Water Waves for Numerical Simulation

Dr. Laura K. Alford and Professor Kevin J. Maki

1:30 – 3:00   Paper Session: **Visualization and Gamification Track** - Room 3AB
Track Keynote Speaker (one hour session)
Dr. Willy Wriggers, Old Dominion University

Gamification and Visualization of Sensor Data Analysis in Research Buildings

Mr. Jackson Stone, Mr. Jibonananda Sanyal, Mr. Charles Castello and Dr. Joshua New

1:30 – 3:00   **Entrepreneur Competition Preliminary Round** - Ballroom Two
While this Preliminary Round is open to the conference audience, only the judges will provide feedback and vote.
Conference attendees are encouraged to attend and vote in the final round at 8:45am Wednesday morning.

3:00 – 3:30   **Break and Exhibit Time** - Ballroom Three

3:30 – 5:00   Paper Session: **Analytics and Decision Making Track** - Room 2A

Natural Language Processing: A Model to Predict a Sequence of Words

Mr. Gerald (Jay) Gendron

Terrisk: Battling Uncertainty in Bioterrorism Models

Dr. Ross Gore and Dr. Barry Ezell

A General Purpose Geospatial Encounter Prediction Model for Border Security

Dr. Allen Harvey, Mr. Damian Kolbay, Mr. Jesse Coleman and Ms. Jessica McNutt

3:30 – 5:00   Paper Session: **Training and Education Track** - Room 2B

Mission Requirements Based Combat Flight Simulator Selection

Mr. Adnan Aygündüz and Mr. Eyyüp Çelik

Higher Order mLearning: Critical Thinking in Mobile Learning

Mr. Shawn McCann

Augmenting Training of the Humeral Head Intraosseous (IO) Procedure with a High Fidelity Anatomical Model

Ms. Angela Alban and Dr. Teresita Sotomayor

3:30 – 5:00 Paper Session: **Science and Engineering Track** - Room 2CD

Emulytics™ at Sandia National Laboratories

Mr. Vincent Urias, Mr. Brian Van Leeuwen, Mr. Brian Wright and Mr. William Stout

An LVC Simulation Interoperability Measurement Framework

Mr. Kiyoul Kim, Mr. Tae Woong Park, Dr. Gene Lee and Dr. Luis Rabelo

Person-Centered Medical and Healthcare Studies

Dr. Ross Gore and Dr. Manasi Sheth-Chandra

3:30 – 5:00 Paper Session: **Visualization and Gamification Track** - Room 3AB

Medical Virtual Integrated Training Environment (VITE)

Ms. Karina Rusnak, Mr. Michael Lewis, Mr. Faisal Ashour, Mr. Jason Mellott and Mr. Matthew Conley

Analyzing Eye-Tracking Accuracy with and without Cursor Feedback for use in a Simulated Robotic Search Task

Dr. Yiannis Papelis, Dr. Ginger Watson and Ms. Kathryn Catlett

Visualization and Animation for Teaching Frank-Wolfe Transportation Network Equilibrium

Mr. Zhi Li, Mr. Ivan Makohon, Dr. Masha Sosonkina, Dr. Yuzhong Shen and Dr. Duc T. Nguyen

5:00 – 7:00 **Attendee Networking Event and Exhibit Time** - Ballroom Three

WEDNESDAY APRIL 01

7:00 – 5:00 **Registration** - Main Lobby - Near Ballroom Three

7:00 – 8:00 **Continental Breakfast** - Ballroom Three

8:00 – 8:15 **MODSIM World 2015 Administrative Remarks** - Ballroom Two
Mrs. Jeanine McDonnell Zubowsky, Vice President, Command Post Technologies

8:15 – 8:45 **Keynote Speaker** - Ballroom Two
Dr. David E. Bowles, Acting Center Director, NASA Langley Research Center

8:45 – 10:00 **Entrepreneur Competition Finals** - Ballroom Two
Moderator: **Mr. Thomas Reese**, VMASC – Old Dominion University
The Entrepreneur Competition is a unique event to showcase innovative start-up ideas in modeling and simulation. Individuals, small teams, and small businesses compete for a cash prize awarded to the best new modeling and simulation-based product or service. Finalists from the preliminary competition will present their idea in front of an esteemed panel of judges and the live audience. All conference attendees are encouraged to view this event.

During this final round, the audience will have an opportunity to vote for their favorite idea by using electronic voting devices provided by Turning Technologies, LLC. The winner will be announced on Thursday April 2.

10:00 – 3:30 **Exhibit Displays and Demonstrations** - Ballroom Three

10:00 – 10:30 **Break and exhibit Time** - Ballroom Three

10:30 – 12:00 Paper Session: **Analytics and Decision Making Track** - Room 2A
Track Keynote Speaker
Mr. Tommy Tavenner, National Wildlife Federation

Fundamental Building Blocks for Vehicle-Pedestrian Interaction in Emergency Evacuations

Ms. Terra Elzie, Ms. Erika Frydenlund, Dr. Andrew Collins and Dr. R. Michael Robinson

Web Enabled Selection Method for Key Performance Indicators for Manufacturing

Ms. Kaleen Lawsure, Dr. Barry Ezell, Mr. John Horst, Dr. Andrew Collins and Dr. Patrick Hester

10:30 – 12:00   Paper Session: **Training and Education Track** - Room 2B

> ### Leveraging Virtualization Technology for Command and Control Systems Training
>> *Mr. Joseph Connery, Mr. Robert Callahan and Dr. Philip Brown*

> ### Modeling Proxemic Cues for Simulation-Based Training in Virtual Environments
>> *Ms. Crystal Maraj, Dr. Stephanie Lackey, Ms. Karla Badillo-Urquiola, Mr. Eric Ortiz and Mr. Irwin Hudson*

> ### Transforming e-Learning into o-Learning: The Power of Organic Learning without the Bells and Whistles
>> *Dr. David Fautua and Dr. Sae Schatz*

10:30 – 12:00   Paper Session: **Science and Engineering Track** - Room 2CD

> ### The Virtual Test Bed: Simulation for Reducing Software Development Testing
>> *Mr. Tien Nhan, Mr. Vernon Hayden and Mr. Jesse Barboza*

> ### An Agile Roadmap for Live Virtual Constructive-Integrating Training Architecture (LVC-ITA): A Case Study Using A Component Based Integrated Simulation Engine (AddSIM)
>> *Mr. Tae Woong Park, Mr. Kiyoul Kim, Dr. Luis Rabelo and Dr. Gene Lee*

> ### Simulated Human Tissue Performance
>> *Mr. Jack Norfleet, Mr. Fluvio Lobo Fenoglietto and Mr. Mark Mazzeo*

10:30 – 12:00   Paper Session: **Visualization and Gamification Track** - Room 3AB

> ### Augmenting Part-Task Training Simulators with Games: Blended Learning for Combat Medics
>> *Mr. Thomas Santarelli and Dr. William Fitts*

> ### Dynamically Coupled 3D Visualization and Real-Time Simulation as an Aid to Developing Mental Models of Sonar
>> *Dr. Jason E. Summers, Mr. Daniel T. Redmond and Dr. Charles F. Gaumond*

> ### Virtual Environments: The "Prompt Jump" for the Next Generation Energy Workforce
>> *Dr. Mark Nesselrode*

12:00 – 1:30   **Lunch and Exhibit Time** - Ballroom Three

1:30 – 3:00   **Technology Showcase** - Ballroom Three

1:30 – 3:00   Paper Session: **Cyber Security** - Room 2B

> ### Training for the Combined Cyber / Kinetic Battlefield
>> *Mr. Lloyd Wihl*

> ### Mixed Reality: The New Reality in DoD Decision Making
>> *Ms. Tracy Lenuik, Mr. Luis E. Velazquez, Mr. Samuel R. Murley, Mr. Nathan Greiner and Mr. Rodger Willis*

> ### Role of Modeling and Simulation in Cyber Security
>> *Dr. Bharat B. Madan and Dr. Barry Ezell*

1:30 – 3:00   Panel Session: **Learning Science Corner** - Room 2A
     Moderator: *Dr. Sae Schatz*
     Instructional Techniques for Emerging Technologies: Ten Recommendations for ALM 2015
          Ms. Helen A. Remily, Office of the TCM TADLP
          Dr. Peggy Kenyon, Office of the TCM TADLP
     Emerging Learning Concepts to Enhance and Elevate Training: Case Studies from the Joint Staff
          Dr. David Fautua, Joint Staff J7
     Marine Corps – Instructional Center of Excellence (MC-ICE)
          Capt Nicholas Armendariz, USMC, Training and Education Command
          Mr. Kenn Knarr, USMC Training and Education Command
          LtCol Mark Lamelza, USMC, I Marine Expeditionary Force

Andragogy Techniques, Trainers and Educators: Enlisted Professional Military Education
Dr. Vanessa Nason, Marine Corps University
Dr. Kim Florich, Marine Corps University

3:00 – 3:30 **Break and Exhibit Time** - Ballroom Three

3:30 – 5:00 Paper Session: **Analytics and Decision Making Track** - Room 2A

Evaluation of Submarine`s Tactical Operations Using Heterogeneous Models

Mr. Kyoungwoon Bang and Mr. Wooyoung Choi

Tradecraft & Analysis Learning using Intelligence Scenarios with Methods-Anchoring (TALISMAN)

Dr. Benjamin Bell and Mr. Michael Marks

An Adaptive Planning Tool For Ship Construction Warehouse Capacities

Mr. Nick Drucker and Mr. Kenyth Campbell

3:30 – 5:00 Paper Session: **Training and Education Track** - Room 2B

The Impact of Training Context on Performance in Simulator-Based Aviation Training

Dr. Daniel Walker

Research and Development of Low-Cost, Point of Injury Medical Simulations

Mr. Matthew Hackett, Mr. Jack Norfleet and Ms. Nadine Baez

Developing Interoperable Data for Training Effectiveness Assessment in Army Marksmanship Training

Dr. Jennifer Murphy, Mr. Michael Hruska, Mr. Gregory Goodwin and Mr. Charles Amburn

3:30 – 5:00 Paper Session: **Science and Engineering Track** - Room 2CD

Ontological Support to Address the Multi-Dimensionality of Complex Systems Engineering Challenges

Dr. Andreas Tolk, Mr. Joe Bricio and Mr. Matt Haase

Quantifying Performance between Tele-Operated and Supervised Autonomous Fire Control

Mr. Benjamin Wheeler, Mr. Eugene Pursel and Dr. Jacyln Baron

Rediscover the Defense M&S Catalog

Mr. Hart Rutherford and Mr. Frank Mullen

3:30 – 5:00 Paper Session: **Visualization and Gamification Track** - Room 3AB

Migration of the Maritime Simulation Model 2.0 into a Force-on-Force Federated Simulation Architecture

Mr. Michael Schneider, Mr. Allen Harvey and Mr. Nicholas Livas

Seriously Mobile: Downloadable Content in Serious Games

Mr. Trey Morabito

Modeling Tools for Cultural Intelligence Development: A Cognitive Engineering Approach

Mr. Thomas Santarelli, Dr. Michael Woodman, Mr. Andrew Rosoff, Dr. William Fitts and Ms. Jennifer Engimann

5:30 – 7:30 **Offsite Networking Event**
Mahi Mahs - Ramada Virginia Beach Oceanfront
615 Atlantic Avenue
Virginia Beach, VA 23451
Pre-registration and pre-payment are required for this event

THURSDAY APRIL 02

7:00 – 4:30   **Registration** - Main Lobby - Near Ballroom Three

7:00 – 8:00   **Continental Breakfast** - Ballroom Three

8:00 – 10:00   **Industry Workshops:**
Healthcare and Human Factors Discussion - Meeting Room 2B
"Better Living through Simulation"
During this two-hour workshop, we will be discussing ways to leverage modeling and simulation (M&S) technologies in the healthcare industry. In particular, we will be discussing how M&S can be leveraged in the medical insurance industry, as well as the clinical and human factors areas of the healthcare industry.

Facilitator:	***Mr. Bob Armstrong***, Program Director, National Center for Collaboration in Medical Modeling and Simulation, Eastern Virginia Medical School (EVMS)
Speakers:	***Ms. Nancy Grden***, Executive Director of the Strome Entrepreneurial Center at Old Dominion University
	Dr. Mark Scerbo, Professor, Human Factors, Department of Psychology, Old Dominion University

Manufacturing and Transportation Panel - Meeting Room 3C
"Build It and Ship It"
The panelists will discuss modeling and analysis techniques which address the impact of developing simulation based management tools that increase efficiencies and productivity of the manufacturing and transportation industries.

The panel will discuss past simulation based initiatives that were implemented, focusing on actual results that generated real improvements related to lean manufacturing, capacity expansion and throughput improvement projects.

Facilitator:	***Mr. Rob Lisle***, Newport News Shipbuilding
Panelists:	***Mr. Glenn Marshall***, Association for Manufacturing Excellence
	Mr. Cavanaugh Mims, Visionary Solutions
	Ms. Kirste Webb, Visionary Center for Sustainable Communities (VCSC)
	Mr. Rex Wallen, Newport News Shipbuilding

8:00 – 10:00   **Energy Panel** - Meeting Room 2A
"Getting Digital Immigrants to Embrace the Digital Natives; Time to MOVE ON!"
The workshop will look at various "stumbling blocks" to using game based training: cost, transfer of knowledge, current capabilities, and ease of use to build an approach to encourage the Digital Immigrants (current leadership) to embrace the Digital Natives (rising workforce).

Facilitator:	***Dr. Mark Nesselrode***, Modeling & Simulation, Principal SME, General Dynamics Information Technology
Panelists:	***Mr. Gerald (Jay) Gendron***, Associate, Booz Allen Hamilton
	Mr. John Coleman, Director of Software Development, TRAX International
	Mr. Matt Spruill, Vice President and Chief Technologist, Engineering & Computer Simulations (ECS)

10:00 – 10:15   **Break** - Ballroom Three

10:15 – 12:15   **Industry Workshop:**
Defense and Homeland Security Panel - Ballroom Two
"Protecting the Nation"
Protecting the nation is not solely the responsibility of the Department of Defense or the military. 21st century "defense" requires new thinking, new approaches and new partners, such as government agencies at all levels, academia, and our allies. Significant challenges exist in the realms of cyber defense and security, social and cultural dynamics and effects, and empowering the sharing of information across law enforcement and public safety entities to identify and interdict threats.

Facilitators:	***Mr. Tony Cerri***, TRADOC, Training Brain Operations Center
	Ms. Kaye Darone, TRADOC, Training Brain Operations Center
Panelists:	***Captain Steve Lambert***, Virginia State Police, Virginia Fusion Center
	Dr. Gary Horne, Blue Canopy Group
	Dr. Dana Eyre, SOSACorp

Agenda by Date and Time

10:15 – 12:15   **Student STEM Event** - Ballroom Three
The STEM event at MODSIM provides a unique opportunity for the conference to contribute directly to the school experience of the youth who are just beginning to formulate their dreams for the future.

Approximately 100 area high school students will get the opportunity to see firsthand the World of Modeling and Simulation (M&S). The students will rotate through multiple hands-on M&S demonstrations.

12:15 – 1:30   **Lunch** - Ballroom Three
Presentation of Entrepreneur Competition Winner

1:30 – 3:30   **Communities of Interest Continuing Discussions:**
National Modeling and Simulation Coalition (NMSC) Panel - Meeting Room 3B
The panel invites discussions on activities leading to a 2016 National M&S Research and Development (R&D) Summit. The NMSC recognizes M&S as a catalyst for solving problems across multiple domains and will explore "convergence" of M&S solutions across these domains supporting an M&S national research agenda.
Moderator: *Dr. Randall Garrett*
Panelists: *Dr. C. Donald Combs*, VP and Dean, School of Health Professions, EVMS
                        Dr. Richard Fujimoto, Chair, Policy Committee, NMSC
                        Mr. Josh Jackson, Vice President, Training and Simulation, SAIC
                        BG Steve M. Seay, USA (Ret), President, Seay Business Solutions
                        Dr. Andreas Tolk, Chief Scientist, SimIS Inc.

Simulation Interoperability Standards Organization (SISO) - Meeting Room 2C
The C2SIM Meeting
This meeting will review and discuss progress since the September 2014 in-person meeting. We expect this will include an initial draft of the C2SIM Core Logical Data Model (LDM) and also, for the PSG, revisions to the C-BML Phase 1 Guidance Document.

Simulation Interoperability Standards Organization (SISO) - Meeting Room 2D
Human Performance Markup Language (HPML) Study Group Meeting
This meeting is to discuss feedback and comments on the draft HPML standard under review. HPML is an XML-Schema-based language intended to cover all meaningful aspects of human performance measurement in various training and operational environments. The HPML hierarchy enables the representation of both generic concepts (e.g., measurements and assessments) and mission specific concepts (e.g., instances of measurements and instances of assessments) necessary for capturing the experiences associated with human performance and human behavior. By making these distinctions, HPML is able both to describe available resources and to express the tailoring of those resources for both training and operational contexts.

MR. RICHARD BOYD

Richard Boyd is the CEO of SZL.it Inc, a human-based neural net company designed to improve content discovery on the Net. He is also an investment partner with the Pavonis Group. Over the last twenty-two years Richard has led or helped create some of the most innovative game technology companies in the industry. He has served as a game technology consultant for a wide variety of industries including energy, healthcare, education and motion pictures. At Aerospace giant Lockheed Martin he created and led a group of innovative engineers and designers across all mission areas called Virtual World Labs. Richard joined Lockheed Martin in 2007 with the acquisition of 3Dsolve, a North Carolina based computer game technology firm where he was founder and CEO.

Richard served for a decade on the executive management team of Virtus Corporation where he helped create several pioneering computer gaming companies including Red Storm Entertainment, with author Tom Clancy; iRock Entertainment with Ozzy Osbourne; and Timeline Computer Entertainment, with author Michael Crichton.

With computer gaming pioneer David Smith, Boyd co-wrote an industry-leading book on VRML technologies, called The Virtus VRML Toolkit, that was widely distributed and translated into three foreign languages. Richard has served on several international standards and conference boards, including the 3D Industry Forum, the ADL Colab SCORM/S1000D Testbed, several I/ITSEC conference sub committees, the Triangle Game Initiative board and the advisory board of the North Carolina Virtual Public Schools.

MR. STUART BULLARD

Stuart Bullard is a musician, composer and recording artist who is proficiently fluent in 13 instruments, best known for his collaboration with Dr. Dre on one of his platinum albums. Stuart is a licensed pilot and investor in video game development where he now focuses his energies along with music production.. Stuart is implementing valued improvements on safety, securities and certifications for sUAS with the UAVSA (Unmanned Autonomous Vehicle System Association). His vast knowledge and experience ushers Stuart's passions in Flight as an Aviator, Technology as a Futurist, and in Music as a world renowned Producer. Stuart is also Vice President of the Board of Directors at MUSE School-CA and Board of Directors at KHEIR Center LA.

DR. CHRIS HAZARD

Chris Hazard is the founder and CEO of Hazardous Software, a serious game studio that specializes in solving strategy-level problems for large organizations in both government and industry, and the CTO of SZL.IT Inc., a company that creates artificial intelligence technology to enhance people's abilities to find content and each other on the web. He holds a PhD in computer science from NC State on artificial intelligence for trust and reputation. He has worked in and been published in a variety of fields from wireless network infrastructure at Motorola, to psychology as part of a post-doc at NCSU, to hypnosis with the National Guild of Hypnotists, to robotics at Kiva Systems, to privacy law working with the Future of Privacy Forum. Dr. Hazard is most publicly known for his 2011 game Achron, which won GameSpot's Best Original Game Mechanic award, and also for his research on serious games and game design. He is a frequent speaker and keynote keynote speaker and is often featured in mainstream press.

MR. RICHARD SPANGLER

Richard Spangler is a recognized change accelerator who creates actionable results. A General Partner and Co-Founder of PlazaBridge Group, he has an intense desire to help growth companies migrate through the maze of issues and to help the executive/entrepreneur accelerate into success while minimizing errors. His expertise includes product strategy and management,entrepreneurship, mergers & acquisitions. Richard has over 25 years of experience in large corporate branding beginning with product management, corporate development and acquisitions for Compaq Computer Corporation. Following Compaq, Richard was the Program Director of Wireless Strategy at IBM, where he redefined the wireless application business. He continued at IBM as the Worldwide Brand Manager overseeing the Aptiva consumer product and new licensing programs for the IBM logo. After IBM, Richard leveraged his extensive experience in web merchandising, technology and strategic management to create 6 startups. Richard holds a B.S. from Guilford College and an M.B.A. from the University of North Carolina, Greensboro. Beyond the PlazaBridge doors, you can find Richard flying, golfing or playing the guitar with his band, The Headless Chickens.

The Simulation Century Biographies

DR. ZEESHAN USMANI

Zeeshan Usmani is a Fulbright Scholar and Eisenhower Fellow. He holds a PhD and MS in Computer Science from the Florida Institute of Technology. As part of his Master's thesis, he has developed a simulation of supermarkets to observe and quantify the effects of herd behavior on impulse shopping by customers. His PhD work focuses on simulation and modeling of blast waves in open and confined spaces. His work has been mentioned in Wall Street Journal, AOL News, Wired Magazine, NPR, MIT's Technology Review, Florida Today, The Economist, Brown Journal of World Affairs, and the Journal of Defense Modeling and Simulation. He has authored dozens of research papers, articles, and several books. His research strengths include real-world simulation, programming human emergent behaviors, and modeling of catastrophic events. He is founder of Pakistan Body Count – the oldest running tally of suicide bombing and drone attacks in Pakistan. He was a Visiting Scholars at Brown University and Industrial Professor at Coventry University. He has worked in Citi Bank New York, Discover Financial, State of Illinois, Fulbright Academy of Science and Technology in Maine, and Ghulam Ishaq Khan Institute, in Topi, Pakistan as an Assistant Professor and most recently as Chief of Research at Interactive Group in Islamabad. He divides his time between Cary, North Carolina and Islamabad, Pakistan.

Senior Leader Panel Biographies

DR. DANETTE ALLEN

Danette Allen is the Chief Technologist for Autonomy at NASA Langley Research Center (LaRC). As such, she is responsible for setting the strategic vision and transforming the workforce to realize the promise of autonomy and enable new missions in space, science, and aeronautics. Her experience across all three domains includes the design, development, and operation of real-time embedded systems, remote sensing payloads for atmospheric science, systems engineering, rapid collaborative engineering for sim-to-flight, immersive virtual and mixed reality environments, mission management, separation assurance, trajectory and path planning, tracking systems, human-machine teaming, and reliable autonomous systems. Dr. Allen is also the Head of NASA LaRC's Autonomy Incubator (AI) that is focused on machine intelligence for precise navigation in dynamic, unstructured, data-deprived environments. She serves as a subject matter expert (SME) on several DoD autonomy programs. Dr. Allen received her PhD and MS in Computer Science from UNC Chapel Hill, her ME in Computer Engineering from ODU, her MBA from the University of Manchester (UK), and double-BS in electrical and computer engineering from North Carolina State University. She is the recipient of the NASA astronauts' Silver Snoopy award for achievements related to human flight safety or mission success.

MR. FRANK DIGIOVANNI

Frank C. DiGiovanni serves as the Director, Force Readiness and Training in the Office of the Under Secretary of Defense (Personnel and Readiness). His responsibilities include policy and oversight of Service and joint training, education and training innovation and capability modernization, advanced distributed learning technologies for the Federal Government, and the Defense Language and National Security Education Office. He leads the Department's $700M Combatant Commander's Exercise and Engagement and Training Transformation account, the development of Live, Virtual and Constructive Training Standards and Architectures, the Defense Readiness Reporting System, Cyber workforce training policy, and ensures training is properly incorporated into major acquisition programs. He also serves as the U.S. National Coordinator for DoD training policies impacting NATO and PfP training, is the National Co-Chair of the NATO Training Group and leads the DoD Credentialing and Licensing Initiative. Mr. DiGiovanni collaborates with interagency partners to develop training strategy and policy to ensure Government civilians and Service members are better prepared to conduct reconstruction and stabilization operations. He oversees efforts and policies associated with sustaining access to DoD's land, air and sea training space and for developing policy, strategic communication and the research agenda associated with energy infrastructure and its impact on the ability of the Department to conduct readiness training activities.

He holds a Bachelor of Science Degree in Civil Engineering, from the University of Arizona in Tucson, Arizona, a Masters of Public Administration Degree, from Old Dominion University, Norfolk, Virginia. He graduated Magna Cum Laude from the Defense Language Institute in the Spanish Language.

Mr. DiGiovanni retired from the Air Force achieving the rank of Colonel with Senior Pilot and Navigator aeronautical ratings. Aircraft flown include the F-15, A-37 and B-52.

His military awards include the Defense Superior Service Medal, Defense Meritorious Service Medal, Global War on Terrorism Expeditionary Medal, Humanitarian Medal, Air Force Expeditionary Service Ribbon with Combat Zone Identifier and the NATO Medal, Yugoslavia.

MR. THOMAS C. IRWIN

Thomas Irwin provides executive-level management in the interpretation of joint training and exercise policy, development of program metrics and practices, and execution of joint training on a global basis. He develops, executes, and assesses a program of distributed joint training and simulation-supported exercises in joint, mission-essential tasks, conditions, and standards for Combatant Commands and Services.

Additionally, Mr. Irwin serves as the Joint Staff Deputy CIO for Joint Force Development, overseeing the Joint Force Development IT Enterprise, including the Global Joint Training Infrastructure (GJTI) for Combatant Command and Service joint training events, development of joint M&S systems, and the Joint Training Enterprise Network (JTEN). He also oversees the Joint Information Operations Range (JIOR) providing a secure environment for cyberspace, EW, MISO, and MILDEC operations capability development/training/ exercises/mission rehearsals, IT/IM systems in support of the Joint Force Development mission, and cyber security for JSJ7.

Prior to his assignment to the Joint Staff, Mr. Irwin, as the Enterprise Director of the USJFCOM J9 Joint Concept Development and Experimentation (JCD&E) program, was responsible for executive oversight of the joint experimentation effort across USJFCOM, Combatant Commands, Services, Joint Task Forces, Office of the Secretary of Defense, and Joint Staff.

Mr. Irwin previously served as the MAGTF C2 Product Group Director at the Marine Corps Systems Command in Quantico, Va. as the senior acquisition professional responsible for USMC Air and Ground C2 systems, Combat ID systems, Radar systems, Unmanned Aerial Systems (UAS), and Ground Based Air Defense (GBAD) systems.

Mr. Irwin had an extensive career in the NAVSEA Warfare Centers, holding various technical and management positions for Battle Force Interoperability, Aegis Combat Systems, Gunfire Control Systems,

and Self Defense Missile Systems.

Mr. Irwin has a BS in Mechanical Engineering from N.C. State University, MS in Systems Engineering Management from the Naval Postgraduate School, and Certificate from MIT in Systems Design and Management.

Awards include the USMC Meritorious Civilian Service Medal for fielding C2 capabilities and two Navy Meritorious Civilian Service awards for Networking Technology and Aegis Software Development.

MR. DENNIS W. REED

Dennis W. Reed is the Deputy for Department of Navy (DoN) Modeling and Simulation (M&S). In this role, he leads the establishment of M&S policy and guidance; provide oversight for Naval M&S needs, requirements and technologies; and the development of the Naval Research, Development, Test and Evaluation (RDT&E) M&S Roadmap.

Mr. Reed also serves as the Navy representative to the Office of the Secretary of Defense (OSD) Acquisition Modeling and Simulation Working Group (AMSWG). He is the Director of a Multi-Service (Naval, Air Force and Army) program that is developing a government owned and sustained joint enterprise architectural framework for constructing Live, Virtual, and Constructive (LVC) environments in order to support the acquisition lifecycle in a more efficient manner.

As the Integrated Warfighting LVC Architect he provides the expertise to develop, design and build live, virtual and constructive (LVC) simulation modeled environments to support RDT&E across the acquisition lifecycle for the Department of Defense. Mr. Reed Chairs the Navy's M&S Leadership Council, leading the standardization and implementation of Navy modeling and Simulation within Department of Navy Communities.

In his role as Battlespace Division Process Improvement Director, Mr. Reed advanced the development and management of processes which have enabled DoD to gain efficiencies and develop an infrastructure to ensure that repeatable complex software models and quality products can be and are reproduced. Mr. Reed maintains focus on process improvement strategies that will leverage knowledge and capabilities, to bring forth the effective, efficient use and reuse of M&S in LVC environments to achieve integrity, repeatability, reusability, and consistent interoperability across and among DOD activities.

Mr. Reed's 24 years of combined military and civil service, supporting Operation, Maintenance, Test and Evaluation of military aircraft and weapons systems, has cultivated an in-depth knowledge of the RDT&E arena; modeling and simulation technologies; standardization, development and implementation of processes & procedures; networking, strategic planning, and management.

Mr. Reed is an active member in the International Test and Evaluation Association and the National Defense Industrial Association. He is a member of the Department of Defense's Acquisition Professional Community, and holds Level III DAIWA certification in the Program Management career field. Mr. Reed holds a Bachelors of Science in Professional Aeronautics with a double minor in Business Administration and Logistics from Embry Riddle Aeronautical University.

MR. JOSEPH P. RUDDY

In September 2014, Joseph P. Ruddy was named Chief Innovation Officer for The Port of Virginia. In this role, Joe will oversee the port's Strategic Planning, Engineering, IT and Sustainability teams.

In his previous role as Chief Operations Officer, Joe helped Virginia International Terminals, LLC, (VIT) earn a reputation as an honest and reliable terminal operations organization. Prior to being named COO, Joe served as the Director of Operations and Labor at VIT and also held a senior position at Virginia Intermodal Management (VIM), a subsidiary company previously responsible for managing and administering all aspects of a port-wide chassis pool. In addition to his previous experience at VIT and VIM, Joe held several positions with international ship line companies including France's CMA-CGM, the world's third largest container carrier, and National Shipping Company of Saudi Arabia (NSCSA).

Joe serves on various boards, including the Hampton Roads Shipping Association, Cystic Fibrosis of Hampton Roads, and Beach FC. In 2013, he was the recipient of the Global Excellence Award, presented by the Virginia International Business Council, based in Richmond. Joe earned a Bachelor's Degree from Virginia Wesleyan College and a Master's Degree from the College of New Jersey.

The MODSIM World Conference and Expo began in 2007, when the Virginia Modeling & Simulation Partnership (VMSP), formerly the Hampton Roads Partnership's Center for Public/Private Partnership (CP3) saw the need to share information about and interest in the vast amount of modeling and simulation (M&S) based development occurring in the Hampton Roads area. In part, because of the synergy created by the efforts of Joint Forces Hampton Roads, Virginia Modeling, Analysis and Simulation Center (VMASC), Eastern Virginia Medical School (EVMS), NASA Langley, and the many other military organizations, colleges, universities and industry members, it became obvious there needed to be a regular forum for the sharing of M&S knowledge and achievement in the region. MODSIM World sprang forth.

2015 CONFERENCE

Conference Chair:
Jeanine McDonnell-Zubowsky, Vice President, Strategic Initiatives, Command Post Technologies

Deputy Conference Chair:
Mike Spitz, Senior Systems Analyst, Training and Simulation, SAIC

Program Chair:
Eric Weisel, Director, R&D
Old Dominion University

Deputy Program Chair:
Gerald (Jay) Gendron, Associate
Booz Allen Hamilton

2014 CONFERENCE

Conference Chair:
Irin Hall, Technical Product Manager, Modeling & Simulation, Newport News Shipbuilding

Deputy Conference Chair:
Jeanine McDonnell-Zubowsky, Vice President, Strategic Initiatives, Command Post Technologies

Program Chair:
Mike Spitz, Senior Systems Analyst, Training and Simulation, SAIC

Deputy Program Chair:
Eric Weisel, Director, R&D
Old Dominion University

2013 CONFERENCE

Conference Chair:
Melvin Ferebee, Manager, Space Technology Projects Office, Space Technology and Exploration Directorate

Program Chair:
Jeanine McDonnell, Vice President, Strategic Initiatives, Command Post Technologies

2011 CONFERENCE

Conference Chair:
Brian Teer, ALION Science and Technology

Program Chair:
Melvin Ferebee, NASA

2010 CONFERENCE

Conference Chair:
Bob Armstrong, Booz I Allen I Hamilton

Program Chair:
Jenn McNamara, BreakAway, Ltd.

2009 CONFERENCE

Conference Chair:
Matt Spruill, Engineering & Computer Simulation (ECS)

Program Chair:
Thom Pinelli, NASA Langley Research Center

2008 CONFERENCE

Conference Chair:
Mike McGinnis, VMASC/ODU

Program Chair:
Paul Fosdick, Northrop Grumman

2007 CONFERENCE
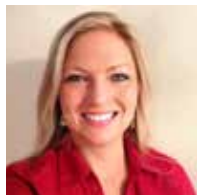
Conference Co-Chairs:
Bill Younger, MYMIC, LLC
Mike Adolphi, PROSOFT

Program Chair:
Mike McGinnis, VMASC/ODU

Conference Leadership

CONFERENCE CHAIR

Mrs. Jeanine McDonnell-Zubowsky
Vice President, Strategic Initiatives, Command Post Technologies

Jeanine Zubowsky started her interest in DOD as an ROTC cadet at the University of Notre Dame. Upon graduation, she was commissioned as a Signal Corps Officer in the US Army. She was first stationed in Ft. Huachuca, AZ, in the 11th Signal Brigade. In Oct 2005, she deployed to Iraq for a year as a Platoon Leader for eight Tactical Satellite Systems attached to the 22nd Signal Brigade out of Germany. Following her active duty time in the US Army, she worked at the Joint Interoperability Test Command (JITC) at Ft. Huachuca for Northrop Grumman as a Test and Evaluation Engineer. In 2008, she moved back to VA to work at Joint Forces Command (JFCOM). Her two duties were at the Joint Systems Integration Command (currently the C4 Assessments Division at the Joint Coalition Warfighting Center) as a Senior Software Systems Analyst as well as working with Mr. John Bolino as the DOT&E (Director, Operational Test and Evaluation) liaison to JFCOM. In 2010, she began working for Command Post Technologies. She primarily supports are the Navy's Test and Evaluation Executive and the Test and Evaluation Director at NAVAIR, Paxtuxent River, MD. She also supports the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation (DASD DTE) and Playas Training and Research Center (PTRC). She supported the US Army Electronic Proving Ground (EPG) for 2 years as well. She is currently the President of the Hampton Roads Chapter of the International Test and Evaluation Association (ITEA).

Mrs. Zubowsky is a Graduate of the University of Notre Dame where she received her Bachelor's Degree in Political Science.

PROGRAM CHAIR

Dr. Eric Weisel
Director for Research and Development, Old Dominion University

Eric Weisel leads technology innovation for academic and commercial research enterprises. As Director of Applied Research at Old Dominion University, he develops multi-disciplinary research programs for faculty, laboratories, and research centers across the University. Under Dr. Weisel's leadership, the Unmanned Autonomous Systems and Robotics Research Cluster promotes research, and develops undergraduate and graduate curricula, in unmanned systems, autonomy, and robotics. Prior to entering the technology research field, he served as a U.S. Navy submarine officer on three Los Angeles class attack submarines and Navy staffs. Dr. Weisel earned the second Ph.D. in Modeling, Simulation, and Visualization Engineering awarded at Old Dominion University and holds an M.S. in Operations Research from the Florida Institute of Technology and a B.S. in Mathematics from the United States Naval Academy. Within the academic and industry communities, he serves as Vice President for Education and Workforce Development for the Society for Modeling & Simulation International (SCS), Program Chair for the MODSIM World Conference, and Chair of the Industrial Development and Business Practice sub-committee of the National Modeling and Simulation Coalition (NM&SC). His research interests include autonomy, simulation formalisms, epistemology of simulation, model-based decision theory, semantic composability theory, and semantic software systems.

DEPUTY CONFERENCE CHAIR
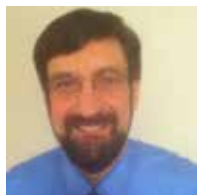
Mr. Mike Spitz
Senior Systems Analyst, SAIC

Mike Spitz, an Engineer with Science Applications International Corporation (SAIC) is a Project Lead at the Architecture & Integration Division, United States Joint Staff J6, in Suffolk, Virginia. With years of extensive operational, modeling and simulation, and systems engineering experience, he uses that expertise in defining the operational and technical context and improving the interoperability for DHS and DoD missions. Mr. Spitz, is a retired Air Force Lieutenant Colonel with over 4,000 flight hours as a pilot in the B-52 aircraft. He holds a Bachelor of Science degree in Aeronautical Engineering from the United States Air Force Academy and a Master of Science Degree in Systems Technology from Louisiana State University in Shreveport.

DEPUTY PROGRAM CHAIR

Mr. Gerald (Jay) Gendron
Associate, Booz Allen Hamilton

Jay Gendron is a data scientist and operations research systems analyst working in Joint Test and Evaluation and training. His analytic pursuits include finding trends in the startup and entrepreneurial communities, assessing learning and sociological impacts of technology-centric training systems, and making results tell the story of business case analyses for procurement and supply chain strategies. He is especially enjoys writing about the impact generational differences have on workforce training and managerial approaches. Jay is an award-winning speaker who has presented at international conferences and symposia. He volunteers his time with the national group Code for America – contributing data science skills to projects aimed at improving civic and municipal access to data and data products. Mr. Gendron has a B.S.M.E. in Mechanical Engineering from the University of Maryland, College Park, a Master of Science in Management of Technology from National Technological University, a Master of Science in Operations Research, and a Graduate Certificate in Chief Information Officer from National Defense University. He is also a product of Massively Open Online Courses and was among the first 40 people to complete the Data Science Specialization by Johns Hopkins University on Coursera. He notes, "Education will never be the same."

RADM James A. Robb, USN (Ret)
President, National Training and Simulation Association (NTSA)

Rear Admiral James A. Robb graduated from Rensselaer Polytechnic Institute in 1972, earned a Master's of Science degree from the University of West Florida in 1973, and was designated a Naval Aviator in 1974. Promoted to Flag rank in January 1999, he served in increasing positions of responsibility in the Navy until his transition from active duty in March 2006.

His final assignment at sea was in command of the *USS John C. Stennis Carrier Strike Group* consisting of nine ships and over 8,000 sailors. Here he led the West Coast maritime response to 9/11 and prepared the Battle Group for support of operations in Afghanistan. Earlier, he commanded *Carrier Air Wing Nine* embarked in *USS NIMITZ* where he was Strike Warfare Commander for naval forces supporting operation Southern Watch/Desert Storm. He also served as Deputy Commander for *Carrier Air Wing Eleven*, and commanded the "Screaming Eagles" of *Fighter Squadron Fifty One.*

Following 9/11, RADM Robb was assigned to the US Central Command as the Director of Plans, Policy and Coalition Affairs. In this capacity he developed strategic and operational plans guiding U.S. and Coalition efforts in the Middle East and was a key member of the forward deployed Battle Staff directing operations Enduring and Iraqi Freedom.

Admiral Robb is also a recognized expert in operational tactics and training, serving as an instructor, test pilot and demonstration pilot in the F-14 TOMCAT. He was Lead Project Pilot and Officer in Charge of Navy/Marine Corps Special Operations flying Russian fighter aircraft in the Tonopah Test Ranges and later commanded the *Navy Fighter Weapons School* also known as TOPGUN.

During his career, he deployed nine times to every major theater of operations, logging over 5,000 flight hours and more than 1,000 carrier landings. Following transition from the Navy, Admiral Robb started an independent consultant business specializing in Strategic Planning and Enterprise process improvement. Admiral Robb assumed the presidency of NTSA on June 1, 2012.

National Training and Simulation Association

The National Training and Simulation Association (NTSA) is America's premier organization representing the interests of the modeling and simulation community worldwide. As such, it serves as a constant point of contact for government, academia, industry, research organizations and the military to exchange information, share knowledge, align business interests and in general stimulate growth and overall advancement of the industry. NTSA pursues these goals through a series of conference, meetings and exhibitions throughout the year. NTSA produces The Interservice/Industry Training, Simulation and Education Conference (I/ITSEC), which is the world's largest conference and exhibition dedicated to modeling and simulation. While NTSA primarily serves the North American community of practice, many of its members and participants are non-US. NTSA is a key member of the International Training and Simulation Alliance (ITSA), a worldwide group of simulation associations who promotes knowledge and information about training and simulation worldwide.

TUESDAY MARCH 31

The Simulation Century - 8:45 AM - 10:00 AM - Ballroom Two
This is the third annual session to address the growing issue of managing the human/machine interface as we hurtle towards the Singularity. This year we will continue our discussion of how to achieve fluency with smarter simulations, achieving the right blend of man and machine to optimize outcomes. The Simulation Century Panel presentations will focus on the growing importance of simulation in a wide variety of fields from healthcare and education to government and military.

Senior Leader Panel - 10:30 AM - 12:00 PM - Ballroom Two
This year at MODSIM World, we are pleased to host a panel of senior leaders within both Government and Industry that will share their perspectives on the issues, impact, and future of M&S. We are fortunate to have flag level and senior civilians from the Pentagon, Joint Staff, Department of the Navy, NASA, and the Virginia Port Authority. These senior leaders 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, MODSIM World 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.

WEDNESDAY, APRIL 1

Entrepreneur Competition - 8:45 AM - 10:00 AM - Ballroom Two
The Entrepreneur Competition is a platform for innovative ModSim start up ideas. Individuals, small teams and existing businesses whose ModSim-based product or service has the potential to grow to significant size and value, will compete online and at the conference, in front of a panel of distinguished judges and a live audience for a chance to win a cash prize. The focus of the competition is on the business potential of the idea.

Technology Showcase - 1:30 PM - 3:00 PM - Ballroom Three
The Technology Showcase will highlight five exhibitors (within their exhibit area) and their technology while attendees are inside the exhibit hall. All presentations will be broadcast over the loud speaker.

1:30 PM Newport News Shipbuilding
1:45 PM SimVentions
2:00 PM VT MÄK
2:15 PM Georgia Tech
2:30 PM MYMIC

THURSDAY, APRIL 2

STEM Event - 10:15 AM - 12:15 PM - Ballroom Three
The STEM Event at MODSIM World 2015 provides a unique opportunity for the conference to contribute directly to the school experience of the youth who are just beginning to formulate their dreams for the future.

Approximately 100 area high school students from five different schools will get the opportunity to see firsthand the world of Modeling and Simulation. The students will rotate through different hands-on M&S demonstrations.

This year, the following companies will be involved in the STEM Event:
• Norfolk Naval Ship Yard
• Newport News Ship Yard
• Virginia Tech
• University of Michigan
• Nauticus
• Virginia First
• ODU

This year, the students will represent the following schools:
• Pruden Center, Suffolk, VA
• Heritage High School (Governor's STEM Academy), Newport News, VA
• Landstown High School (Governor's STEM Academy), Virginia Beach, VA
• Grassfield High School (Governor's STEM Academy), Chesapeake, VA
• Faith Deliverance, Norfolk, VA

Thursday Workshops

HEALTHCARE AND HUMAN FACTORS DISCUSSION

"Better Living through Simulation"
During this two-hour workshop, we will be discussing ways to leverage modeling and simulation (M&S) technologies in the healthcare industry. In particular, we will be discussing how M&S can be leveraged in the medical insurance industry, as well as the clinical and human factors areas of the healthcare industry.

MANUFACTURING AND TRANSPORTATION PANEL

"Build It and Ship It"
The panelists will discuss modeling and analysis techniques which address the impact of developing simulation based management tools that increase efficiencies and productivity of the manufacturing and transportation industries.

The panel will discuss past simulation based initiatives that were implemented, focusing on actual results that generated real improvements related to lean manufacturing, capacity expansion and throughput improvement projects.

ENERGY PANEL

"Getting Digital Immigrants to Embrace the Digital Natives; Time to MOVE ON!"
By 2020 over 75% of the workforce will be comprised of either Gen X or Millenials. There is a segment of the Gen X population by experience or preference can be "lumped" with the Digital Natives. Both of these groups are extremely comfortable with immersive game-based technology. The issue at present is the need for the Boomers (aka Digital Immigrants) to allow this mode of learning to augment (and eventually begin to replace) traditional brick and mortar environments. A further challenge is the belief that "hands on" and "live" cannot be replicated by a Virtual Environment. Finally, as the Boomers leave the workforce, if their experience is NOT incorporated into training, there will be a failure to transfer knowledge.

The workshop will look at various "stumbling blocks" to using game based training: cost, transfer of knowledge, current capabilities, and ease of use to build an approach to encourage the Digital Immigrants (current leadership) to embrace the Digital Natives (rising workforce).

DEFENSE AND HOMELAND SECURITY PANEL

"Protecting the Nation"
Workshop and theme chair Mr. Tony Cerri, Data Transformation Lead for the U. S. Army's Training and Doctrine Command Directorate of Intelligence (TRADOC G2) Training Brain Operations Center (TBOC) will facilitate the discussion on "Protecting the Nation", with panel participants addressing different aspects of Modeling and Simulation pertaining to the protection of our national interests. He will be assisted by the deputy theme chair, Ms. Kaye Darone, lead for Integration and Innovation for the TBOC.

Protecting the nation is not solely the responsibility of the Department of Defense or the military. 21st century "defense" requires new thinking, new approaches and new partners, such as government agencies at all levels, academia, and our allies. Significant challenges exist in the realms of cyber defense and security, social and cultural dynamics and effects, and empowering the sharing of information across law enforcement and public safety entities to identify and interdict threats.

DR. DANA EYRE

Dana Eyre is a Senior Social Scientist for SOSACorp, where he serves as program manager and evangelist for the Model Enhanced Analysis, Design, and Execution (MEADE) program. He is a sociologist specializing in the analysis, planning, coordination, and evaluation of social change and strategic communications efforts for peace building and conflict transformation. He holds a PhD in sociology from Stanford University; has worked in the Middle East, South Asia, and Africa; and has been on the faculty of the US Naval Postgraduate School, George Mason University, the United States Military Academy and the Lester B. Pearson Canadian International Peacekeeping Training Center.

America's national security challenges all are, at their core, problems originating in "the human domain." Immediate and long-term national security problems with their roots in social dynamics poses a set of fundamental challenges for the modeling and simulation community: "human domain dynamics" are not quite as tractable for analytical, modeling, and simulation technologies as physical science based phenomena. Nonetheless, applying these technologies to our national security challenges offers substantial potential payoffs in efficiency and effectiveness of our actions.

DR. GARY HORNE

Gary Horne is a Principal Analyst at Blue Canopy Group, LLC, headquartered in Reston, Virginia. He holds a Doctorate in Operations Research from the George Washington University. He is the originator of Data Farming, a methodology where simulation models and high performance computing are combined to explore large possibility spaces. Currently he serves as a Co-Chair of the NATO Modeling and Simulation Task Group (MSG) 124 "Developing Actionable Data Farming Decision Support for NATO." Within this task group, he co-leads the Cyber Defense Syndicate.

Dr. Horne will describe his current work leading cyber defense initiatives in support of the NATO Modeling and Simulation Group entitled "Developing Actionable Data Farming Decision Support for NATO." This group's objective is to apply data farming capabilities to contribute to the development of improved decision support to NATO forces.

CAPTAIN STEVE LAMBERT

Steve Lambert is a second generation Virginia State Trooper that has served for over 27 years in and around the Richmond Metro area. Steve holds a Bachelor's Degree in Economics from Wake Forest University, a Master's Degree in Criminal Justice Administration from Virginia Commonwealth University and completed National Criminal Justice Command College at the University of Virginia.

Post 9-11, he led the reorganization of the Special Operations Unit involved with aggressive drug interdiction, into the Counter-Terrorism Criminal Interdiction Unit. Steve also served as the state Intelligence Lieutenant for three years, and now commands the Criminal Intelligence Division which houses the Virginia Fusion Center – a multi-disciplined information and intelligence center that serves federal, state, local and the private sector partners dedicated to fighting crime and terrorism. The Fusion Center primarily uses M&S in the realm of "predictive policing."

MR. GLENN MARSHALL

Glenn Marshall is currently serving on the strategy team for Revitalization of North American Manufacturing and leads the initiative focusing on Manufacturing AS A Desirable Career. This initiative is designed to reduce the critical shortage of skilled workers for advanced technology and manufacturing. In this role he reaches out to business leaders, academia, students, veterans, and policymakers to promote innovative ideas to create more opportunities and candidates for high paying careers in designing and building things at home, again. He was the benchmarking / process excellence advocate for Newport News Shipbuilding (NNS). This position require him to indentify performance gaps and then finding industry best practices to address those issues, and then deploying them. He was engaged with all levels of the corporation, supply chain, and the Navy. He led the Northrop Grumman proposal team from NNS to supported the Navy's Task Force Lean initiative. He continues to work with NNS in its out reach to the public schools and colleges on Career Pathways. He is actively involved with other learning organizations and serves on the Association for Manufacturing Excellence - board of directors, the US Senate Productivity and Quality board of directors, and co-founder of the Virginia Business Excellence Consortium Partnership Team and help launch the AME APQC Benchmarking Community of Practice with Raytheon, Boeing, Northrop Grumman and other industry leaders. Glenn is Lean and Six Sigma Certified. He is a Virginia and South Carolina Quality and Manufacturing Excellence examiner. He received a degree in business and economics from Westminster College, New Wilmington, Pennsylvania. He is a graduate of the ARMY Quartermaster Officer Candidate School.

MR. CAVANAUGH MIMS

Over the past 28 years, Cavanaugh Mims has established himself as a leader in business and program management. After graduating from the University of Tennessee with a degree in nuclear engineering, he began his career as a station nuclear engineer for the Tennessee Valley Authority and advanced to senior program/project manager for the Department of Energy providing expertise in the waste management field before creating Visionary Solutions, LLC (VS) – www.vs-llc.com. In 2000, Mr. Mims established VS to provide technical support for Government and Commercial clients on sensitive material campaigns. In 2006 he acquired Interstate Ventures, Inc. to manage the transportation and logistics of commercial nuclear clients both nationally and internationally. Today, he is providing high quality solutions to complex technical challenges across an array of services, including transportation and logistics, waste management, nuclear operations, training and other technical services. VS is now recognized as a "one-stop" shop for government and private companies seeking to address complex challenges spanning logistics, program management, and training services. Mr. Mims has managed large scale, highly visible contracts for the Department of Energy and has earned several awards based on his leadership and participation in the local TN community. VS proudly supports other small businesses, serving as a mentor to assist others who face similar challenges to that which VS has overcome during the past 12 years.

Workshops Biographies

MR. MATT SPRUILL

Matt Spruill is ECS's Chief Technologist and runs the Virginia Operation. He has been providing simulations for training in government and industry since 1998. Matt retired from the U.S. Army after 20 years of service, 10 of which involved providing Live, Virtual and Constructive training solutions at the tactical, operational, and strategic levels. He currently works for Engineering & Computer Simulations, an Advance Learning Solutions company. He graduated from the University of Kentucky in 1988 and earned his MS in Computer Information Systems from Colorado State University in 1997. He is the co-author of "Echoes of Thunder, A Guide to the Seven Days Battles" and "Summer Lightning, A Guide to the Second Battle of Manassas."

MR. REX WALLEN

Rex A. Wallen is a Manufacturing Engineer currently working with Huntington Ingles Industries (HII) in Newport News, Virginia. He is currently active in the development of simulation based management tools for logistical supply chain management, manufacturing and construction processes for shipbuilding and energy related industries. He has worked in all aspects of ship construction performing tasks ranging from the development of manufacturing time standards to the implementation of robotic manufacturing cells. Prior to joining HII, Rex held positions with General Motors and Ingersoll Rand as a production foreman and Industrial Engineer. In addition to holding degrees including a BS in Engineering from Purdue University, a Master's in Business Administration from the College of William & Mary, and Masters in Computer Simulation from Old Dominion University, he holds certifications in Lean Manufacturing and Six Sigma.

MS. KIRSTE WEBB

Kriste Webb is the Executive Director for Visionary Center for Sustainable Communities, a national non-profit organization (pending 501(c)(3) approval), which is helping to coordinate a collaboration of educational institutions, private sector, military, and federal government to implement the Troops to Technology Workforce Development Initiative (T3WDI). In addition, she is building a national program to align underrepresented populations to careers in industries that are facing significant skills gaps such as advanced manufacturing and transportation. She has more than 28 years' experience in new business acquisition including meeting with customers to identify potential opportunities, qualifying opportunities and determining company ability to perform, developing teaming strategies, developing and implementing strategies to win, and developing proposals. She also offers extensive experience leading teams comprised of multiple companies, including small business joint ventures and prime-sub relationships. She holds a B.S. in Business Management and an MBA, Marketing, from the University of Phoenix.

THURSDAY, APRIL 2

NM&SC
National Modeling & Simulation Coalition

The National Modeling & Simulation Coalition (NMSC) is a cross-discipline organization of stakeholders in the Modeling and Simulation (M&S) industry. The vision of the NMSC is to serve as the capstone organization to promote and leverage M&S to better the human condition and to strengthen the National well-being. The NMSC is the only national organization representing M&S across all domains and disciplines including health care, manufacturing, industrial development, energy, transportation, education, homeland security, defense and others. This coalition was formed in 2012 by a committed network of individuals, corporations, national and international associations, academic and research institutions, governmental organizations, and organizations supporting the government – all using M&S technologies to further advance their domains and disciplines.

The mission of the NMSC is to create a unified national community of individuals and organizations around M&S technology and professional practice. Its role and purpose is to serve the needs of all components of the M&S community, to promote and further a national agenda for modeling and simulation, and to drive its growth and use into broad areas to support our national economy, welfare, and security.

National Modeling and Simulation Coalition (NMSC) Panel
The panel invites discussions on activities leading to a 2016 National M&S Research and Development (R&D) Summit. The NMSC recognizes M&S as a catalyst for solving problems across multiple domains and will explore "convergence" of M&S solutions across these domains supporting an M&S national research agenda.

SISO Simulation Interoperability Standards Organization
"Simulation Interoperability & Reuse through Standards"

The Simulation Interoperability Standards Organization (SISO) serves the global community of modeling and simulation (M&S) professionals, providing an open forum for the collegial exchange of ideas, the examination and advancement of M&S-related practices and technologies, and the development and management of standards and other products that enable greater M&S capability, interoperability, credibility, reuse, and cost-effectiveness. As a recognized International Standards Development Organization, SISO, through its members, transforms ideas, proven practices, and innovative technologies into products that can be used and reused by M&S professionals.

SISO provides standards, guidance, and reference products on its website for downloading at no charge. Please visit http://www.sisostds.org/ for more information.

Simulation Interoperability Standards Organization (SISO)
The C2SIM Meeting
This meeting will review and discuss progress since the September 2014 in-person meeting. We expect this will include an initial draft of the C2SIM Core Logical Data Model (LDM) and also, for the PSG, revisions to the C-BML Phase 1 Guidance Document.

Simulation Interoperability Standards Organization (SISO)
Human Performance Markup Language (HPML) Study Group Meeting
This meeting is to discuss feedback and comments on the draft HPML standard under review. HPML is an XML-Schema-based language intended to cover all meaningful aspects of human performance measurement in various training and operational environments. The HPML hierarchy enables the representation of both generic concepts (e.g., measurements and assessments) and mission specific concepts (e.g., instances of measurements and instances of assessments) necessary for capturing the experiences associated with human performance and human behavior. By making these distinctions, HPML is able both to describe available resources and to express the tailoring of those resources for both training and operational contexts.

Scholarships

MODSIM World is pleased to continue the MODSIM Undergraduate Student Scholarships, offered to stimulate student interest and university participation in preparing individuals for leadership in the area of Modeling & Simulation. One student (completing an Associate of Science (AS) degree program at a Virginia Community College) will receive a scholarship in the amount of $1,250 and a second student (completing their junior year of the BS-M&SE degree program at Old Dominion University and planning to enroll in the BS/MS accelerated program) will receive a scholarship in the amount of $3,500. The recipients will attend the MODSIM World Conference and Expo, where they will be recognized, view the latest in simulation-based training and education technologies, and meet leading figures from government, industry and academia associated with this community. The scholarship program is funded by the National Training and Simulation Association (NTSA) through proceeds gleaned from the MODSIM World Conference. The program is administered on behalf of NTSA by Old Dominion University.

The 2015 Scholarship Awards will be presented by The Honorable Terry McAuliffe, Governor of Virginia, during MODSIM World Opening Ceremonies on Tuesday March 31st.

RICHARD GARREN

Richard has experienced past professional success as a US Navy Submarine Sonar Supervisor, a Vice President with two contracting firms, and an entrepreneur. His passion to help people through research and development of medical equipment & apps led him to ODU in the summer of 2013, when he entered the Modeling & Simulation Engineering program with minor studies in Biomedical Engineering. Richard intends to complete his Bachelor of Science in Modeling, Simulation, and Visualization Engineering in May, 2016, and his Master of Engineering in Modeling and Simulation in 2017.

Richard is currently finishing his junior year of study in ODU's MSVE program. While attending Old Dominion, he has been honored to be involved with various organizations and student clubs. Among those are Tau Beta Pi Engineering Honor Society and Golden Key International Honor Society. An integral part of his success at ODU is the educational foundation he received from Tidewater Community College, Virginia Beach campus, where he graduated Summa Cum Laude. He is also involved with community service projects through his active involvement with Circle-K Club and Roc Solid Foundation. Additionally, Richard serves as the Vice President of SCS –ODU chapter of The Society for Modeling & Simulation International.

SPENCER SMITH

Spencer Smith is pursuing a BS/MS in Modeling and Simulation Engineering. He attended Tidewater Community College from 2010-2013, and is set to complete his undergraduate program in spring 2016, and Master's program in spring 2017 (both at Old Dominion University). He serves as the President of The Society for Modeling and Simulation International – ODU Chapter, and is an active volunteer in the service organization Circle K International. In addition to his studies, Spencer is currently with Skanska, a world leading project development and construction group as a BIM (Building Information Modeling) engineering intern.

Diverse Companies

ACADEMIA

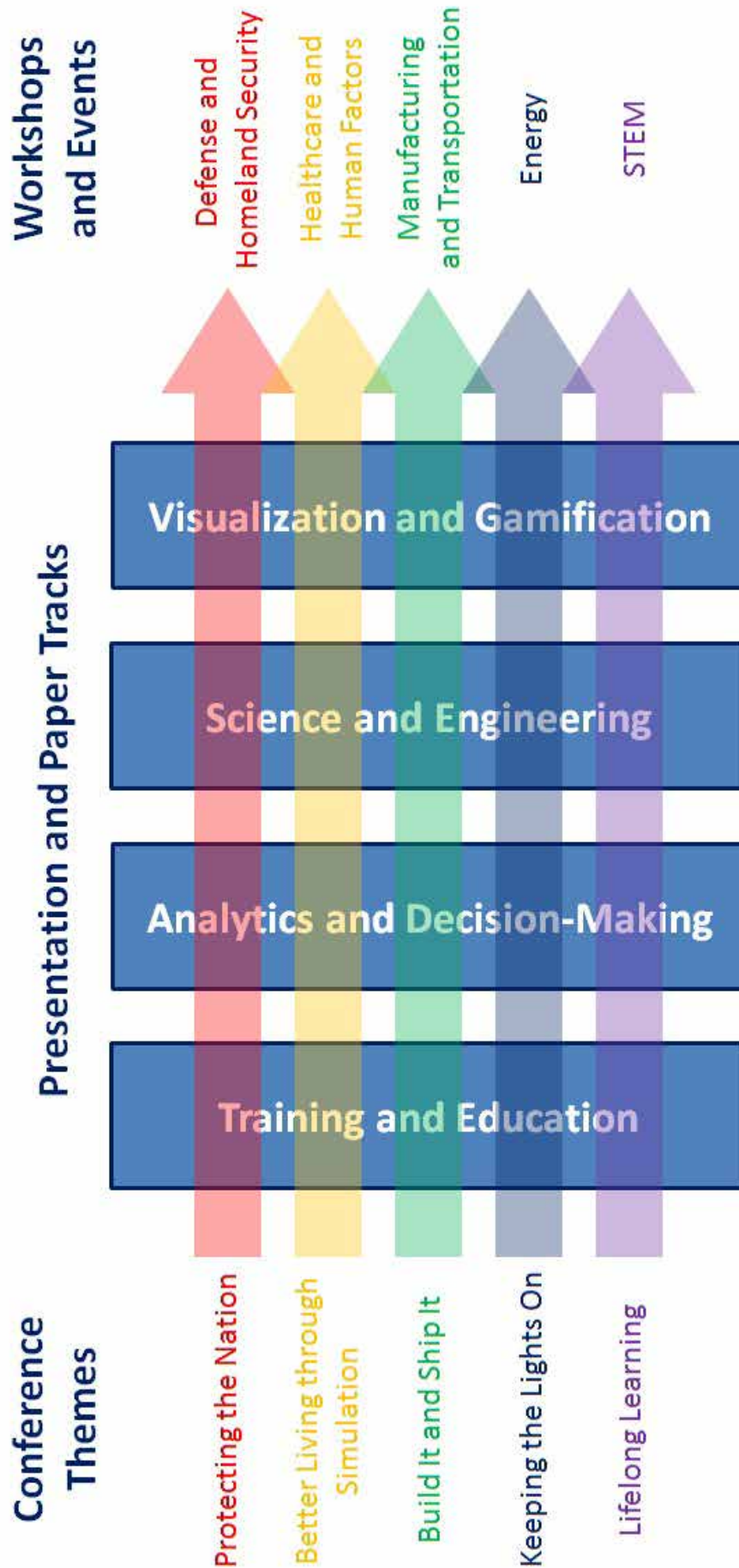# Advancing M&S Capabilities

CREATING A BETTER FUTURE

DDL OMNI ENGINEERING

MYMIC
The Only Way to Train

LOCKHEED MARTIN

CPT COMMAND POST TECHNOLOGIES

Capstone CORPORATION

GENERAL DYNAMICS

JDSAT
Operations Research & Big Data Sciences

SimIS
Modeling the Future. Securing the Enterprise.

LOYOLA ENTERPRISES INC

ITA INTERNATIONAL

ALION SCIENCE AND TECHNOLOGY

Parroco CREATIVE SOLUTIONS

ATS APPLIED TRAINING SOLUTIONS, LLC

MOSIMTEC
predict. decide. improve.

AT&LT
Advanced Training & Learning Technology

NORTHROP GRUMMAN

VT MÄK
A company of VT Systems

TerraSim
A BOHEMIA INTERACTIVE SIMULATIONS COMPANY

Booz | Allen | Hamilton

Rockwell Automation

Newport News Shipbuilding
A Division of Huntington Ingalls Industries

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Workshops and Events

- Defense and Homeland Security
- Healthcare and Human Factors
- Manufacturing and Transportation
- Energy
- STEM

Presentation and Paper Tracks

- Visualization and Gamification
- Science and Engineering
- Analytics and Decision-Making
- Training and Education

Conference Themes

- Protecting the Nation
- Better Living through Simulation
- Build It and Ship It
- Keeping the Lights On
- Lifelong Learning

TRAINING & EDUCATION Track

Track Chair – Dr. Benjamin Bell - Room 2B

TUESDAY, MARCH 31

1:30 – 2:30   **Track Keynote Speaker** (one hour session)
Mr. Jose Vazquez, Department of Homeland Security (DHS)

2:30 – 3:00   **Everything I Ever Needed to Know About Simulation and Training I Learned from Ender's Game**
Mr. William Pike, Mr. Mark Mazzeo and Dr. Sae Schatz

3:30 – 4:00   **Mission Requirements Based Combat Flight Simulator Selection**
Mr. Adnan Aygündüz, Mr. Eyyüp Çelik

4:00 – 4:30   **Higher Order mLearning: Critical Thinking in Mobile Learning**
Mr. Shawn McCann

4:30 – 5:00   **Augmenting Training of the Humeral Head Intraosseous (IO) Procedure with a High Fidelity Anatomical Model**
Ms. Angela Alban and Dr. Teresita Sotomayor

WEDNESDAY, APRIL 1

10:30 – 11:00   **Leveraging Virtualization Technology for Command and Control Systems Training**
Mr. Joseph Connery, Mr. Robert Callahan and Dr. Philip Brown

11:00 – 11:30   **Modeling Proxemic Cues for Simulation-Based Training in Virtual Environments**
Ms. Crystal Maraj, Dr. Stephanie Lackey, Ms. Karla Badillo-Urquiola, Mr. Eric Ortiz and Mr. Irwin Hudson

11:30 – 12:00   **Transforming e-Learning into o-Learning: The Power of Organic Learning without the Bells and Whistles**
Dr. David Fautua and Dr. Sae Schatz

3:30 – 4:00   **The Impact of Training Context on Performance in Simulator-Based Aviation Training**
Dr. Daniel Walker

4:00 – 4:30   **Research and Development of Low-Cost, Point of Injury Medical Simulations**
Mr. Matthew Hackett, Mr. Jack Norfleet and Ms. Nadine Baez

4:30 – 5:00   **Developing Interoperable Data for Training Effectiveness Assessment in Army Marksmanship Training**
Dr. Jennifer Murphy, Mr. Michael Hruska, Mr. Gregory Goodwin and Mr. Charles Amburn

Agenda by Track

SCIENCE & ENGINEERING TRACK
TRACK CHAIR – DR. CANDACE ESHELMAN-HAYNES - ROOM 2CD

TUESDAY, MARCH 31

1:30 – 2:00   **Employing High Performance Computing to Realize a Cyber Quick-Reaction Training Environment**
Mr. Brian Castello, Mr. John Tran, Mr. Douglas Hire, Mr. Robert Lucas and Mr. Ke-Thia Yao

2:00 – 2:30   **Credibility of Modeling and Simulation via Triangulation**
Dr. Mariusz Balaban

2:30 – 3:00   **Generating Large Deterministic Water Waves for Numerical Simulation**
Dr. Laura K. Alford and Professor Kevin J. Maki

3:30 – 4:00   **Emulytics™ at Sandia National Laboratories**
Mr. Vincent Urias, Mr. Brian Van Leeuwen, Mr. Brian Wright and Mr. William Stout

4:00 – 4:30   **An LVC Simulation Interoperability Measurement Framework**
Mr. Kiyoul Kim, Mr. Tae Woong Park, Dr. Gene Lee and Dr. Luis Rabelo

4:30 – 5:00   **Person-Centered Medical and Healthcare Studies**
Dr. Ross Gore and Dr. Manasi Sheth-Chandra

WEDNESDAY, APRIL 1

10:30 – 11:00   **The Virtual Test Bed: Simulation for Reducing Software Development Testing**
Mr. Tien Nham, Mr. Vernon Hayden and Mr. Jesse Barboza

11:00 – 11:30   **An Agile Roadmap for Live Virtual Constructive-Integrating Training Architecture (LVC-ITA): A Case Study Using A Component Based Integrated Simulation Engine (AddSIM)**
Mr. Tae Woong Park, Mr. Kiyoul Kim, Dr. Luis Rabelo and Dr. Gene Lee

11:30 – 12:00   **Simulated Human Tissue Performance**
Mr. Jack Norfleet, Mr. Fluvio Lobo Fenoglietto and Mr. Mark Mazzeo

3:30 – 4:00   **Ontological Support to Address the Multi-Dimensionality of Complex Systems Engineering Challenges**
Dr. Andreas Tolk, Mr. Joe Bricio and Mr. Matt Haase

4:00 – 4:30   **Quantifying Performance between Tele-Operated and Supervised Autonomous Fire Control**
Mr. Benjamin Wheeler, Mr. Eugene Pursel and Dr. Jacyln Baron

4:30 – 5:00   **Rediscover the Defense M&S Catalog**
Mr. Hart Rutherford and Mr. Frank Mullen

ANALYTICS & DECISION MAKING TRACK

TRACK CHAIR – MR. JESSE BARBOZA - ROOM 2A

TUESDAY, MARCH 31

1:30 – 2:00 **Track Keynote Speaker**
Dr. Andrew Collins, Associate Professor, VMASC

2:00 – 2:30 **Foreign Fishing Vessel (FFV) Impact Analysis**
*LT Elizabeth Denicola, USCG and
LCDR Blair Sweigart, USCG*

2:30 – 3:00 **Object Oriented Population Generation**
Dr. Jacob Barhak

3:30 – 4:00 **Natural Language Processing: A Model to Predict a Sequence of Words**
Mr. Gerald (Jay) Gendron

4:00 – 4:30 **Terrisk: Battling Uncertainty in Bioterrorism Models**
Dr. Ross Gore and Dr. Barry Ezell

4:30 – 5:00 **A General Purpose Geospatial Encounter Prediction Model for Border Security**
*Dr. Allen Harvey, Mr. Damian Kolbay,
Mr. Jesse Coleman and Ms. Jessica McNutt*

4:00 – 4:30 **Tradecraft & Analysis Learning using Intelligence Scenarios with Methods-Anchoring (TALISMAN)**
Dr. Benjamin Bell and Mr. Michael Marks

4:30 – 5:00 **An Adaptive Planning Tool For Ship Construction Warehouse Capacities**
Mr. Nick Drucker and Mr. Kenyth Campbell

WEDNESDAY, APRIL 1

10:30 – 11:00 **Track Keynote Speaker**
Mr. Tommy Tavenner, National Wildlife Federation

11:00 – 11:30 **Fundamental Building Blocks for Vehicle-Pedestrian Interaction in Emergency Evacuations**
*Ms. Terra Elzie, Ms. Erika Frydenlund,
Dr. Andrew Collins and Dr. R. Michael Robinson*

11:30 – 12:00 **Web Enabled Selection Method for Key Performance Indicators for Manufacturing**
*Ms. Kaleen Lawsure, Dr. Barry Ezell,
Mr. John Horst, Dr. Andrew Collins and
Dr. Patrick Hester*

3:30 – 4:00 **Evaluation of Submarine`s Tactical Operations Using Heterogeneous Models**
Mr. Kyoungwoon Bang and Mr. Wooyoung Choi

Agenda by Track

VISUALIZATION & GAMIFICATION Track

Track Chair – Dr. Michel Audette - Room 3AB

TUESDAY, MARCH 31

1:30 – 2:30 **Track Keynote Speaker (one hour session)**
Dr. Willy Wriggers, Old Dominion University

2:30 – 3:00 **Gamification and Visualization of Sensor Data Analysis in Research Buildings**
Mr. Jackson Stone, Mr. Jibonananda Sanyal, Mr. Charles Castello and Dr. Joshua New

3:30 – 4:00 **Medical Virtual Integrated Training Environment (VITE)**
Ms. Karina Rusnak, Mr. Michael Lewis, Mr. Faisal Ashour, Mr. Jason Mellott and Mr. Matthew Conley

4:00 – 4:30 **Analyzing Eye-Tracking Accuracy with and without Cursor Feedback for use in a Simulated Robotic Search Task**
Dr. Yiannis Papelis, Dr. Ginger Watson and Ms. Kathryn Catlett

4:30 – 5:00 **Visualization and Animation for Teaching Frank-Wolfe Transportation Network Equilibrium**
Mr. Zhi Li, Mr. Ivan Makohon, Dr. Masha Sosonkina, Dr. Yuzhong Shen and Dr. Duc T. Nguyen

WEDNESDAY, APRIL 1

10:30 – 11:00 **Augmenting Part-Task Training Simulators with Games: Blended Learning for Combat Medics**
Mr. Thomas Santarelli and Dr. William Fitts

11:00 – 11:30 **Dynamically Coupled 3D Visualization and Real-Time Simulation as an Aid to Developing Mental Models of Sonar**
Dr. Jason E. Summers, Mr. Daniel T. Redmond and Dr. Charles F. Gaumond

11:30 – 12:00 **Virtual Environments: The "Prompt Jump" for the Next Generation Energy Workforce**
Dr. Mark Nesselrode

3:30 – 4:00 **Migration of the Maritime Simulation Model 2.0 into a Force-on-Force Federated Simulation Architecture**
Mr. Michael Schneider, Mr. Allen Harvey and Mr. Nicholas Livas

4:00 – 4:30 **Seriously Mobile: Downloadable Content in Serious Games**
Mr. Trey Morabito

4:30 – 5:00 **Modeling Tools for Cultural Intelligence Development: A Cognitive Engineering Approach**
Mr. Thomas Santarelli, Dr. Michael Woodman, Mr. Andrew Rosoff, Dr. William Fitts and Ms. Jennifer Engimann

MR. JESSE BARBOZA
ANALYTICS & DECISION MAKING

Jesse Barboza is a Senior Business Systems Analyst at SimIS, Inc. He is responsible for the business/systems analysis of Information Systems development and innovation of upcoming concepts of Modeling and Simulation solutions. Mr. Barboza brings experience to the development of information technologies, software development along with project management to his project teams. Mr. Barboza has a B.S.B.A. from Old Dominion University (ODU) where he majored in Information Systems and Technology with a minor in Business Analytics. Mr. Barboza is currently pursuing a Master's of Information Technology from Virginia Tech.

DR. MICHEL AUDETTE
VISUALIZATION & GAMIFICATION

Michel Audette, Ph.D. is Assistant Professor in Modeling, Simulation and Visualization Engineering at Old Dominion University; he is also a biomedical engineer with research interests in medical simulation, medical image analysis, surgery planning, as well as imaging and simulation applications for military well-being. He is a leading proponent of patient-specific medical simulation based on a minimally supervised image segmentation and meshing pipeline, and his main clinical applications are in neuro- and orthopedic surgery. His military-related research deals the application of simulation and phantom experiments for preventing blast-induced traumatic brain injury (bTBI), as well as imaging-based diagnostics for assessing the severity of bTBI. His career has spanned industry and academia, including work in flight simulation, welding automation, neurosurgical navigation and open-source medical image analysis software, as well as post-doctoral fellowships in Japan and Germany.

MR. BENJAMIN BELL
TRAINING & EDUCATION

Benjamin Bell is a Principal and founder of Aqru Research and Technology, LLC, where he directs the application of artificial intelligence to simulation, training, human-machine interaction, and work support environments across a spectrum of applications, including K-12, higher education, military and national security. He has held academic positions, leadership positions in industry, serves on the I/ITSEC conference committee and is an associate editor for the IEEE Transactions on Human-Machine Systems. Dr. Bell is an assistant adjunct professor at Embry Riddle, holds a Ph.D. from Northwestern University and is a graduate of the University of Pennsylvania.

MS. CANDACE ESHELMAN-HAYNES
SCIENCE & ENGINEERING

Candace Eshelman-Haynes is a native Texan and a rabid Cowboys fan. She completed her undergraduate work at Hardin-Simmons University in Abilene, Texas with majors in Social Work and Psychology. She holds a Master of Arts degree from Hardin-Simmons in Family Systems. Dr. Eshelman-Haynes began her career working with families, children, and people with developmental disabilities. After several years of practice she returned to school at Wright State University in Dayton, Ohio and earned a Master of Science and Doctorate of Philosophy in Human Factors and Industrial/Organizational Psychology specializing in visual motion perception and the development of cognitive models for action in 3D space.

She has been working for NATO Allied Command Transformation since 2006 supporting capability development in the Technology and Human Factors Branch. In her role as Human Factors Specialist she has led multinational teams in experimentation and capability development on topics ranging from collaborative sensemaking to Cyber Defence. Her recent work has included social media monitoring and analysis to support awareness and understanding in operations, and leading implementation for NATO Cyber Defence Awareness.

Track Chair Biographies

DR. RAEGAN HOEFT
DEPUTY TRACK CHAIR, TRAINING AND EDUCATION

Raegan Hoeft recently joined Design Interactive to lead their DI Support Solutions division. Previously, Dr. Hoeft spent six years as a senior human factors engineer at Lockheed Martin, leading research activities and serving as the human factors subject matter expert on multiple efforts related to the design and analysis of complex systems. During her time at Lockheed Martin, she won six individual awards and one team award for her work on projects ranging from combat systems to first responder applications. Dr. Hoeft has been an active member of the human factors community for over 10 years, both in publishing research at annual conferences and in holding volunteer and mentoring positions. In 2013, she was a finalist for the UX Day Best Paper Award at the Annual Meeting of the Human Factors and Ergonomics Society and won the Best Paper Award at the 2013 International Association of Social Sciences and Behavioral Research conference. She won second place for the Best Paper Award at Human Systems Integration Symposium in 2011. Raegan received her PhD in applied experimental and human factors psychology and her MS in human engineering from the University of Central Florida. She received her BA in industrial/organizational psychology from The College of New Jersey.

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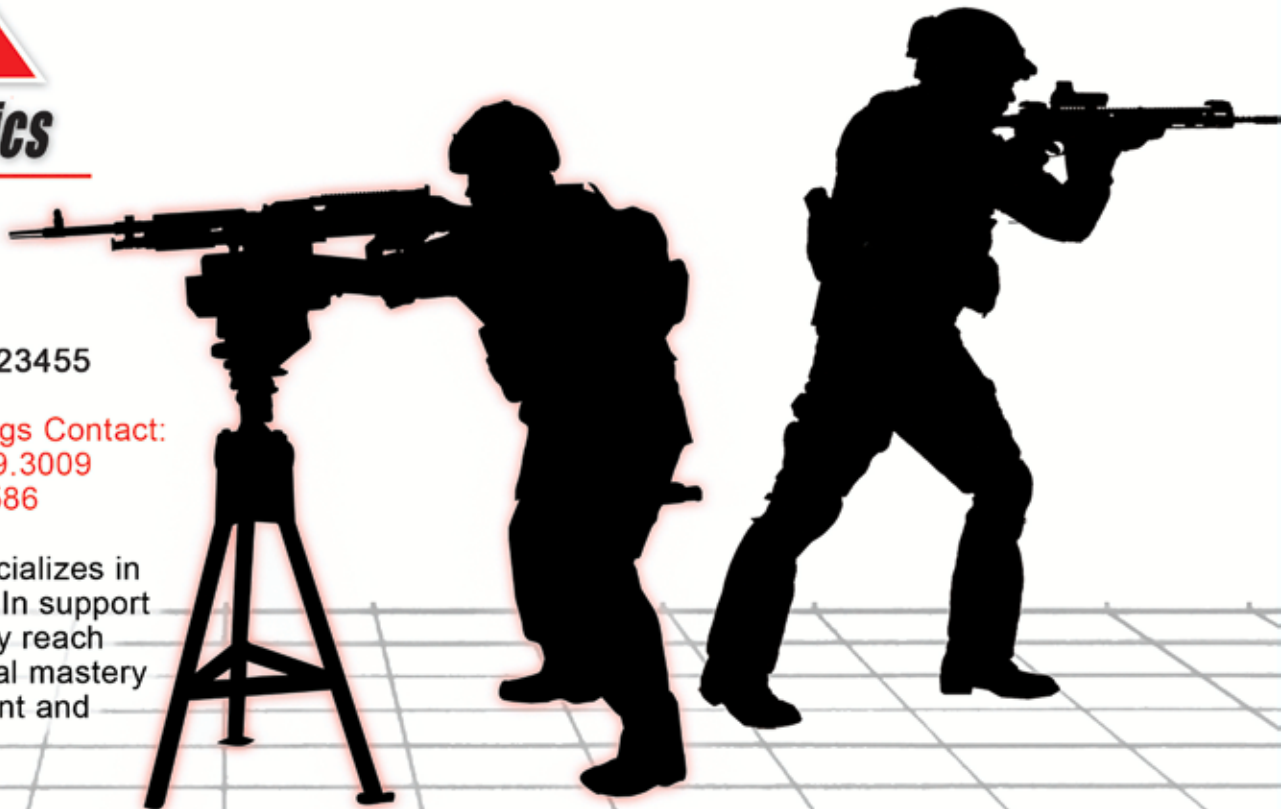
Color	Theme
Pink	Protecting the Nation - Defense and Homeland Security
Yellow	Better Living through Simulation - Healthcare and Human Factors
Green	Build It and Ship It - Manufacturing and Transportation
Gray	Keeping the Lights On - Energy
Purple	Lifelong Learning - STEM
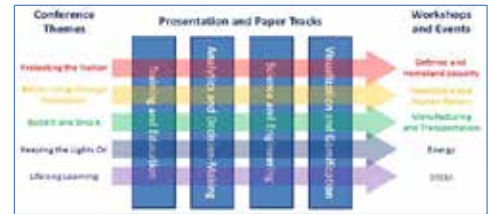
Time	Analytics and Decision Making	Education and Training	Science and Engineering	Visualization and Gamification
TUES				
1:30-2:00	Track Keynote Speaker	Track Keynote Speaker	Employing High Performance Computing to Realize a Cyber Quick-Reaction Training Environment	Track Keynote Speaker
2:00-2:30	Foreign Fishing Vessel (FFV) Impact Analysis		Credibility of Modeling and Simulation via Triangulation	Track Keynote Speaker
2:30-3:00	Object Oriented Population Generation	Everything I Ever Needed to Know About Simulation and Training I Learned from Ender's Game	Generating Large Deterministic Water Waves for Numerical Simulation	Gamification and Visualization of Sensor Data Analysis in Research Buildings
TUES				
3:30-4:00	Natural Language Processing: A Model to Predict a Sequence of Words	Mission requirements based combat flight simulator selection	Emulytics™ at Sandia National Laboratories	Enhanced Virtual Environment for Manikin-Based Medical Training
4:00-4:30	Terrisk: Battling Uncertainty in Bioterrorism Models	Higher Order mLearning: Critical Thinking in Mobile Learning	Person-Centered Medical and Healthcare Studies	Analyzing eye-tracking accuracy with and without cursor feedback for use in a simulated robotic search task
4:30-5:00	A General Purpose Geospatial Encounter Prediction Model for Border Security	Augmenting Training of the Humeral Head Intraosseous (IO) Procedure with a High Fidelity Anatomical Model	An LVC Simulation Interoperability Measurement Framework	Visualization and Animation for Teaching Frank-Wolfe Transportation Network Equilibrium
WED				
10:30-11:00	Track Keynote Speaker	Leveraging Virtualization Technology for Command and Control Systems Training	The Virtual Test Bed: Simulation for reducing software development testing.	AUGMENTING PART-TASK TRAINING SIMULATORS WITH GAMES: BLENDED LEARNING FOR COMBAT MEDICS
11:00-11:30	Fundamental Building Blocks for Vehicle-Pedestrian Interaction in Emergency Evacuations	Modeling Proxemic Cues for Simulation-Based Training in Virtual Environments	An Agile Road-map for Live Virtual Constructive-Integrating Training Architecture (LVC-ITA): A Case Study Using A Component Based Integrated Simulation Engine (AddSIM)	Dynamically coupled 3D visualization and real-time simulation as an aid to developing mental models of sonar
11:30-12:00	Web Enabled Selection Method for Key Performance Indicators for Manufacturing	Transforming e-Learning into o-Learning: The Power of Organic Learning without the Bells and Whistles	Simulated Human Tissue Performance	Virtual Environments: The "Prompt Jump" for the Next Generation Energy Workforce
WED				
1:30-2:00		Training for the Combined Cyber / Kinetic Battlefield		
2:00-2:30	Mixed Reality: The New Reality in DoD Decision Making			
2:30-3:00			Role of Modeling and Simulation in Cyber Security	
WED				
3:30-4:00	Evaluation of Submarine`s Tactical operations using heterogeneous models	The Impact of Training Context on Performance in Simulator-Based Aviation Training	Ontological Support to address the Multi-Dimensionality of Complex Systems Engineering Challenges	Migration of the Maritime Simulation Model 2.0 into a Force-on-Forced Federated Simulation Architecture
4:00-4:30	Tradecraft & Analysis Learning using Intelligence Scenarios with Methods-Anchoring (TALISMAN)	Research and Development of Low-Cost, Point of Injury Medical Simulations	Quantifying performance between tele-operated and supervised autonomous fire control	Seriously Mobile: Downloadable Content in Serious Games
4:30-5:00	An Adaptive Planning Tool For Ship Construction Warehouse Capacities	Developing Interoperable Data for Training Effectiveness Assessment in Army Marksmanship Training	Rediscover the Defense M&S Catalog	Modeling Tools for Cultural Intelligence Development: A Cognitive Engineering Approach

Agenda by Theme

PROTECTING THE NATION (DEFENSE AND HOMELAND SECURITY)

Tuesday March 31

1:30 – 2:00   **Employing High Performance Computing to Realize a Cyber Quick-Reaction Training Environment**
Mr. Brian Castello, Mr. John Tran, Mr. Douglas Hire, Mr. Robert Lucas and Mr. Ke-Thia Yao

3:30 – 4:00   **Mission Requirements Based Combat Flight Simulator Selection**
Mr. Adnan Aygündüz, Mr. Eyyüp Çelik

4:00 – 4:30   **An LVC Simulation Interoperability Measurement Framework**
Mr. Kiyoul Kim, Mr. Tae Woong Park, Dr. Gene Lee and Dr. Luis Rabelo

Wednesday April 1

10:30 – 11:00   **The Virtual Test Bed: Simulation for Reducing Software Development Testing**
Mr. Tien Nham, Mr. Vernon Hayden and Mr. Jesse Barboza

11:00 – 11:30   **An Agile Roadmap for Live Virtual Constructive-Integrating Training Architecture (LVC-ITA): A Case Study Using A Component Based Integrated Simulation Engine (AddSIM)**
Mr. Tae Woong Park, Mr. Kiyoul Kim, Dr. Luis Rabelo and Dr. Gene Lee

1:30 – 2:00   **Training for the Combined Cyber / Kinetic Battlefield**
Mr. Lloyd Wihl

2:00 – 2:30   **Mixed Reality: The New Reality in DoD Decision Making**
Ms. Tracy Lenuik, Mr. Luis E. Velazquez, Mr. Samuel R. Murley, Mr. Nathan Greiner and Mr. Rodger Willis

3:30 – 4:00   **Evaluation of Submarine`s Tactical Operations Using Heterogeneous Models**
Mr. Kyoungwoon Bang and Mr. Wooyoung Choi

4:00 – 4:30   **Tradecraft & Analysis Learning using Intelligence Scenarios with Methods-Anchoring (TALISMAN)**
Dr. Benjamin Bell and Mr. Michael Marks

4:30 – 5:00   **Developing Interoperable Data for Training Effectiveness Assessment in Army Marksmanship Training**
Dr. Jennifer Murphy, Mr. Michael Hruska, Mr. Gregory Goodwin and Mr. Charles Amburn

BETTER LIVING THROUGH SIMULATION (DEFENSE AND HOMELAND SECURITY)

Tuesday March 31

2:30 – 3:00   **Object Oriented Population Generation**
Dr. Jacob Barhak

3:30 – 4:00   **Medical Virtual Integrated Training Environment (VITE)**
Ms. Karina Rusnak, Mr. Michael Lewis, Mr. Faisal Ashour, Mr. Jason Mellott and Mr. Matthew Conley

4:30 – 5:00   **Person-Centered Medical and Healthcare Studies**
Dr. Ross Gore and Dr. Manasi Sheth-Chandra

4:30 – 5:00   **Augmenting Training of the Humeral Head Intraosseous (IO) Procedure with a High Fidelity Anatomical Model**
Ms. Angela Alban and Dr. Teresita Sotomayor

Wednesday April 1

10:30 – 11:00   **Augmenting Part-Task Training Simulators with Games: Blended Learning for Combat Medics**
Mr. Thomas Santarelli and Dr. William Fitts

11:00 – 11:30   **Modeling Proxemic Cues for Simulation-Based Training in Virtual Environments**
Ms. Crystal Maraj, Dr. Stephanie Lackey, Ms. Karla Badillo-Urquiola, Mr. Eric Ortiz and Mr. Irwin Hudson

11:30 – 12:00   **Simulated Human Tissue Performance**
Mr. Jack Norfleet, Mr. Fluvio Lobo Fenoglietto and Mr. Mark Mazzeo

3:30 – 4:00   **The Impact of Training Context on Performance in Simulator-Based Aviation Training**
Dr. Daniel Walker

4:00 – 4:30   **Research and Development of Low-Cost, Point of Injury Medical Simulations**
Mr. Matthew Hackett, Mr. Jack Norfleet and Ms. Nadine Baez

4:30 – 5:00   **Modeling Tools for Cultural Intelligence Development: A Cognitive Engineering Approach**
Mr. Thomas Santarelli, Dr. Michael Woodman, Mr. Andrew Rosoff, Dr. William Fitts and Ms. Jennifer Engimann

BUILD IT AND SHIP IT (MANUFACTURING AND TRANSPORTATION)

Tuesday March 31

2:00 – 2:30   **Foreign Fishing Vessel (FFV) Impact Analysis**
LT Elizabeth Denicola, USCG and LCDR Blair Sweigart, USCG

2:30 – 3:00   **Generating Large Deterministic Water Waves for Numerical Simulation**
Dr. Laura K. Alford and Professor Kevin J. Maki

4:00 – 4:30   **Analyzing Eye-Tracking Accuracy with and without Cursor Feedback for use in a Simulated Robotic Search Task**
Dr. Yiannis Papelis, Dr. Ginger Watson and Ms. Kathryn Catlett

4:30 – 5:00   **A General Purpose Geospatial Encounter Prediction Model for Border Security**
Dr. Allen Harvey, Mr. Damian Kolbay, Mr. Jesse Coleman and Ms. Jessica McNutt

Wednesday April 1

11:00 – 11:30   **Dynamically Coupled 3D Visualization and Real-Time Simulation as an Aid to Developing Mental Models of Sonar**
Dr. Jason E. Summers, Mr. Daniel T. Redmond and Dr. Charles F. Gaumond

11:30 – 12:00   **Web Enabled Selection Method for Key Performance Indicators for Manufacturing**
Ms. Kaleen Lawsure, Dr. Barry Ezell, Mr. John Horst, Dr. Andrew Collins and Dr. Patrick Hester

3:30 – 4:00   **Migration of the Maritime Simulation Model 2.0 into a Force-on-Force Federated Simulation Architecture**
Mr. Michael Schneider, Mr. Allen Harvey and Mr. Nicholas Livas

4:00 – 4:30   **Quantifying Performance between Tele-Operated and Supervised Autonomous Fire Control**
Mr. Benjamin Wheeler, Mr. Eugene Pursel and Dr. Jacyln Baron

4:30 – 5:00   **An Adaptive Planning Tool For Ship Construction Warehouse Capacities**
Mr. Nick Drucker and Mr. Kenyth Campbell

KEEPING THE LIGHTS ON (ENERGY)

Tuesday March 31

2:30 – 3:00   **Everything I Ever Needed to Know About Simulation and Training I Learned from Ender's Game**
Mr. William Pike, Mr. Mark Mazzeo and Dr. Sae Schatz

3:30 – 4:00   **Emulytics™ at Sandia National Laboratories**
Mr. Vincent Urias, Mr. Brian Van Leeuwen, Mr. Brian Wright and Mr. William Stout

4:00 – 4:30   **Terrisk: Battling Uncertainty in Bioterrorism Models**
Dr. Ross Gore and Dr. Barry Ezell

Wednesday April 1

10:30 – 11:00   **Leveraging Virtualization Technology for Command and Control Systems Training**
Mr. Joseph Connery, Mr. Robert Callahan and Dr. Philip Brown

11:00 – 11:30   **Fundamental Building Blocks for Vehicle-Pedestrian Interaction in Emergency Evacuations**
Ms. Terra Elzie, Ms. Erika Frydenlund, Dr. Andrew Collins and Dr. R. Michael Robinson

11:30 – 12:00   **Virtual Environments: The "Prompt Jump" for the Next Generation Energy Workforce**
Dr. Mark Nesselrode

2:30 – 3:00   **Role of Modeling and Simulation in Cyber Security**
Dr. Bharat B. Madan and Dr. Barry Ezell

LIFELONG LEARNING (STEM)

Tuesday March 31

1:30 – 2:00   **Gamification and Visualization of Sensor Data Analysis in Research Buildings**
Mr. Jackson Stone, Mr. Jibonananda Sanyal, Mr. Charles Castello and Dr. Joshua New

2:00 – 2:30   **Credibility of Modeling and Simulation via Triangulation**
Dr. Mariusz Balaban

3:30 – 4:00   **Natural Language Processing: A Model to Predict a Sequence of Words**
Mr. Gerald (Jay) Gendron

4:00 – 4:30   **Higher Order mLearning: Critical Thinking in Mobile Learning**
Mr. Shawn McCann

4:30 – 5:00   **Visualization and Animation for Teaching Frank-Wolfe Transportation Network Equilibrium**
Mr. Zhi Li, Mr. Ivan Makohon, Dr. Masha Sosonkina, Dr. Yuzhong Shen and Dr. Duc T. Nguyen

Wednesday April 1

11:30 – 12:00   **Transforming e-Learning into o-Learning: The Power of Organic Learning without the Bells and Whistles**
Dr. David Fautua and Dr. Sae Schatz

3:30 – 4:00   **Ontological Support to Address the Multi-Dimensionality of Complex Systems Engineering Challenges**
Dr. Andreas Tolk, Mr. Joe Bricio and Mr. Matt Haase

4:00 – 4:30   **Seriously Mobile: Downloadable Content in Serious Games**
Mr. Trey Morabito

4:30 – 5:00   **Rediscover the Defense M&S Catalog**
Mr. Hart Rutherford and Mr. Frank Mullen

Theme Chair Biographies

DR. LAURA K. ALFORD
DEPUTY CHAIR - LIFELONG LEARNING
Laura K. Alford is a Research Investigator in the Department of Naval Architecture and Marine Engineering at the University of Michigan, Ann Arbor. Her research interests revolve around developing practical engineering solutions to the challenges faced early in the design process. Her dissertation formed the basis of the Design Loads Generator (DLG), a method that determines short wave trains leading to extreme vessel motions and forces, thus allowing for the use of high fidelity simulations in early design. Her current research involves integrating the DLG with high fidelity CFD programs, modeling flow over an artificial fish spawning reef to determine optimal reef shapes, and collaborating on the development of a real-time environmental and ship motion forecasting system.

MR. BOB ARMSTRONG
BETTER LIVING THROUGH SIMULATION
Bob Armstrong is the Program Director for the National Center for Collaboration in Medical Modeling and Simulation (NCCMMS) at Eastern Virginia Medical School in Norfolk, Virginia. He is responsible for the daily operations of the Center, to include development of collaborative research partnerships as well as research project and personnel management.
Bob joined NCCMMS from Booz Allen Hamilton, where he provided modeling and simulation (M&S)-based analysis, developed M&S training tools, and drafted M&S policy for Department of Defense clients. Prior to his time at Booz Allen, Bob was Director of Technology at the Virginia Modeling, Analysis and Simulation Center at ODU.

MR. TONY CERRI
PROTECTING THE NATION
Tony Cerri is the Data Transformation Lead for the TRADOC G2's Training Brain Operations Center. He is responsible for the integration of technologies to facilitate Operational Environment replication. Previous assignments include leading the JS J7's Joint Operating Systems Environment, leading the Experiment Engineering Div for USJFCOM J9 and serving as M&S Branch Chief for USJFCOM J9.

Tony is a graduate of the United States Military Academy. He earned masters degrees from Central Michigan University in Administration and from the Florida Institute of Technology in Management. His military awards include the Legion of Merit and the Bronze Star.

MS. KAYE DARONE
DEPUTY CHAIR - PROTECTING THE NATION
Kaye Darone is lead for Integration and Innovation at TRADOC G2's Training Brain Operations Center. Her team is the primary interface to industry, academia, and government to identify and integrate capabilities to support the TBOC's primary mission as the provider of the Operational Environment (OE). Previous assignments were with Joint Forces Command (JFCOM) directorates of Experimentation (J9) and Intelligence (J2), and the Joint Staff's Joint Force Development directorate (J7).
Kaye holds an undergraduate degree from James Madison University and a master's degree from the University of Denver. Prior to joining the government in 2004, she spent twenty years as a defense contractor in the Washington DC area and in Hampton Roads VA.

MR. ROB LISLE
BUILD IT AND SHIP IT
Rob Lisle is director, Program Integration for SN3 - Stoller Newport News Nuclear. Named to this position in 2014, Lisle is responsible for development and integration of innovative engineering technologies across the SN3 enterprise with a major emphasis on the application of modeling, simulation and analysis.
Lisle began his career in 1985 with Newport News Shipbuilding (NNS), where he has served as an engineer on several Navy programs including, Submarine Overhaul (Nuclear), Los Angeles Class submarine modular construction, Seawolf Class submarine design, Virginia Class submarine design, and the Ford Class aircraft carrier program. In 1996, Lisle served as the NNS Program Manager for the DARPA Simulation Based Design Program building a new modeling, simulation and analysis capability at NNS. Since then he has held a number of positions of increasing responsibility, including; Ship Design Manager and Engineering Manager.
He earned a Bachelors of Science in Civil Engineering from the University of Tennessee.

DR. LEIGH MCCUE
LIFELONG LEARNING
Leigh McCue is an Associate Professor in Virginia Tech's Department of Aerospace and Ocean Engineering and a core faculty member of the Virginia Center for Autonomous Systems. Her research interests are in nonlinear and chaotic vessel dynamics and computational fluid dynamics. Additionally, Dr. McCue has twice

participated in the ASEE-ONR Summer Faculty Research Program to continue her work in collaboration with researchers at the Carderock Division of the Naval Surface Warfare Center and was on sabbatical for the 2011-2012 academic year with the Combatant Craft Division of the Naval Surface Warfare Center, Carderock. She is passionate about getting research into the hands of operators as evidenced by her two iOS-based, fishing vessel safety apps SCraMP and FVdrills.

DR. MARK NESSELRODE
KEEPING THE LIGHTS ON

Mark Nesselrode, Ph.D. is the Modeling and Simulation, Subject Matter Expert for the Training and Simulation Solutions Division of General Dynamics Information Technology. He has over 35 years of experience in simulation and training in the fields of nuclear propulsion, shipboard damage control, shipboard and area air defense, and Joint Task Force combat assessment. Since 2007 he has held Technical Director, Business Development, Chief Scientist and Vice President Positions in support of DoD and commercial customers. He is a retired United States Navy Captain, Surface Warfare Officer, with subspecialties in Nuclear Power and Air Defense. He interviewed with Admiral Rickover and was accepted into the Navy Nuclear power program. He was also certified as Engineer by Admiral Rickover before his second nuclear warship tour. He was certified by Admiral Bowman for Command of Nuclear Powered warships before his final nuclear warship tour as Chief Engineer of USS ENTERPRISE. During his time aboard four different nuclear warships, he was responsible for the training of watch teams in preparation for the annual Reactor Safeguards exam, and on 3 separate occasions led a training program graded as Excellent by the Propulsion Examining Board. He also had two shipboard commands (one as an Aegis Cruiser Commander in combat) in addition to two other shipboard tours (a total of four tours with combat experience) as well as command ashore. His research and professional background interests are in the areas of distributed simulation, training assessment, Virtual and Augmented Reality for immersive training and operational rehearsal in areas such as emergency response for firefighting, engineering casualties, power plant operations, and security team training. He is also keenly interested in tying the above to methodologies which determine the return on investment for these solutions as well as metrics to validate training proficiency. Dr. Nesselrode is currently researching and developing a Virtual Environment capability which utilizes both Virtual Reality and Augmented Reality as the basis for advanced maintenance, operations, outage management and emergency response for various nuclear and non-nuclear power plant applications. Dr. Nesselrode holds a Bachelor of Science degree in Mathematics from the US Naval Academy, a Master's and Engineer Degree in Mechanical Engineering from US Naval Postgraduate School, and a Doctorate in Modeling and Simulation from Old Dominion University.

Ballroom III

Entrance

#	
1	Loyola Enterprises
2	CSC
3	Virginia Beach Economic Development Coucil
5	Hampton Roads Economic Development Alliance
6	Georgia Tech Research Institute (GTRI)
7	Intelligent Decision Systems Inc.
8/9	Newport News Shipbuilding
10	AEgis Technologies
11	Old Dominion University - Modeling, Simulation & Visualization Engineering
12	VT MÄK
13	MYMIC LLC
14	George Mason University, Virginia Serious Game Institute
15	Aruba Networks
16	Simventions / M&S Catalog

Tabletop Displays

AEGIS TECHNOLOGIES   TABLE 10

AEgis Technologies is a privately held small business headquartered in Huntsville, Alabama, USA, that provides advanced technology and expert consulting services to industries throughout the world. AEgis specializes in modeling & simulation (M&S) and micro/nanoscale technology development. The company's M&S products and services include simulation software and training simulators; geospatial databases; 3D models; war fighter exercise support; systems engineering and analysis; verification, validation, and accreditation (VV&A); test and evaluation support; Hardware-in-the-Loop (HWIL) and Man-in-the-Loop (MIL) simulation. Advanced Technologies excels in advancing cutting edge micro and nanoscale technologies from concept to deployment with applications ranging from defense to energy to biotechnology.

Contact: Georgina Chapman • *Phone:* (256)922.0802 ext. 1588 • *Email:* gchapman@aegistg.com

ARUBA NETWORKS   TABLE 15

Aruba is a leading provider of next-generation secure mobility and network access solutions, Aruba Networks has accredited and deployed hundreds of federally-validated and policy-compliant wireless and wired infrastructures for major branches of the U.S. government and armed services. Aruba offers access solutions for the mobile enterprise – including NIPR and SIPR LAN (WLAN), remote access, outdoor mesh networks, guest access, classified networking and network access solutions.

Contact: Brad Webster • *Phone:* (301)512-8692 • *Email:* bwebster@arubanetworks.com

CSC   TABLE 2

CSC Maritime Training Solutions provides simulation based maritime training systems to clients around the world. Bridge Team Navigation & Ship Handling, Cargo Handling, Intelligent Simulations and Mission Rehearsal systems. And now introducing VitualShip 9 with even greater capabilities! Solutions for most maritime training needs and 100s of systems deployed. Creating efficient and highly effective training products is the mission of CSC's Center for Instructional Systems Design. Whether it's initial, refresher or lifelong learning, CSC is prepared to develop custom training solutions to meet all requirements. CSC's center excels in the design of web-based instruction, computer based simulations, and instructor-led training.

Contact: Henry Jackson • *Phone: (*202)675-6193 • *Email:* hjackson9@csc.com

GEORGE MASON, VIRGINIA SERIOUS GAME INSTITUTE (VSGI)   TABLE 14

The business, community outreach, and applied R&D arm of the Computer Game Design Program at George Mason University is the Virginia Serious Game Institute (VSGI). Founded as an affiliate of one of six in the world (Coventry UK, MDA Singapore, Northwestern South Africa, Mexico, and Australia) at Mason. VSGI offers Commonwealth schools, businesses and universities hands-on training, certification, research and development assistance, emerging game company incubation, rapid prototype development, as well as links into leading edge commercialization outputs and technologies that will provide market advantage in the areas of simulation, modeling, and game design for the Commonwealth of Virginia.

Contact: Stephanie Burton • *Phone:* (703)993-5805 • *Email:* sburton3@gmu.edu

GEORGIA TECH RESEARCH INSTITUTE (GTRI)   TABLE 6

Georgia Tech Research Institute (GTRI) is a global leader in applied research and development whose world-class engineers and scientists solve some of the toughest problems facing government and industry. GTRI is uniquely positioned within the Georgia Institute of Technology (Georgia Tech), a top research university. Many of our experts are recognized internationally in a vast array of research domains. GTRI's core research areas include complex and agile systems engineering, sensor design and integration, modeling and simulation, information management and cyber security, and defense technology development. GTRI has over 1900 employees and conducts more than $360 million in sponsored research annually.

Contact: *Phone:* (404)407-7400 • *Email:* comminfo@gtri.gatech.edu • *URL:* gtri.gatech.edu.

HAMPTON ROADS ECONOMIC DEVELOPMENT ALLIANCE   TABLE 5

The mission of the Hampton Roads Economic Development Alliance (HREDA or "the Alliance") is to market Hampton Roads worldwide as the region of choice for business investment and expansion. The Alliance works in collaboration with its private sector investors and the fifteen localities it represents to recruit new and expanding businesses to the region. HREDA has been recognized by the International Economic Development Council as an Accredited Economic Development Organization (AEDO) for the past 11 years and is one of 43 organizations of its kind in the United States to have such accreditation. For more information about the Alliance, visit www.hreda.com.

Contact: Mike "Yaz" Yaskowsky • *Phone:* (757)728.5166 • *Email:* myaz@hampton.com

INTELLIGENT DECISION SYSTEMS, INC   TABLE 7

The expert in the industry of human and organizational performance, Intelligent Decision Systems, Inc. (IDSI) is a woman-owned, small business providing human and organizational performance products and services. IDSI is unique in our understanding and application of the science of learning to our designs, allowing us to provide customers with desirable, predictable outcomes. IDSI's discipline based approach to the final product provides our customers with purposeful designs which provide an ideal learning experience for the users. Our services include, but are not limited to: Research and Analysis; Live, Virtual, Constructive & Gaming; PC-based Simulations; Interactive Multimedia Instruction; and Desktop Trainers.

Contact: Colleen Hall • *Phone:* 757-707-1056 • *Email:* hall.colleen@idsi.com

LOYOLA ENTERPRISES   TABLE 1

Loyola Enterprises Inc. provides innovative solutions using the latest technologies in state-of-the art simulation, high fidelity visualization and world class content creation to meet our customer's long term vision and strategies for training, analysis and operational objectives. Loyola has partnered with industry leading software vendors Presagis, Havok, 8LAS and IMMY to engineer and deliver integrated, game-changing technologies such as a Holographic Mission Rehearsal System that push the envelope for immersive and augmented reality training to the next level for both Federal Government and Civil agencies. Certified Service Disabled Veteran Owned Small Business (SDVOSB).

Contact: Benito Loyola • *Phone:* 757-498-6118 x101 • *Email:* Benito@loyola.com

MYMIC LLC   TABLE 13

MYMIC LLC is an award winning Small Business specializing in M&S, Immersive Virtual Training, Technical Services, Business Process Management, and Operations Training Support.
MODSIM Demo: Virtual Control Room, APL Virtual Ship Tour , Project Tango brings a new kind of spatial perception to the Android device platform by adding advanced computer vision, image processing, and specialized sensors. Using customized hardware and software, these devices are designed to track the full 3D motion in real-time while simultaneously learning surroundings.
Other capabilities include subject matter expertise, requirements analysis and analytical support to the DoD, as well as research analysis and support to Joint Staff.

Contact us at *Phone:* (757)391-9200 or www.mymic.net for additional information.

NEWPORT NEWS SHIPBUILDING   TABLE 8/9

For 125 years, the ships built at Newport News Shipbuilding have served our nation in peace and war, in times of adversity and in times of abundance. Our legacy of "Always Good Ships" includes the design, modeling & simulation, construction, overhaul and repair of more than 800 ships for the U.S. Navy and commercial customers.

We are the nation's sole designer, builder and refueler of nuclear powered aircraft carriers and one of only two shipyards capable of designing and building nuclear powered submarines. Our modeling and simulation technologies are at the forefront of capabilities enabling these business ventures.

Contact: Marco Estrada • *Phone:* (757)534-4796 • *Email:* Marco.t.estrada@hii-nns.com

Tabletop Displays

ODU-MSVE   TABLE 11

Old Dominion University is the first and only university in the nation to offer an undergraduate four-year degree program leading to the Bachelor of Science (B.S.) in Modeling and Simulation Engineering. ODU was the first to establish the Doctor of Philosophy (Ph.D.) in modeling and simulation in 2000, and is now the first to establish an academic department, the Department of Modeling, Simulation and Visualization Engineering (MSVE), to better serve our students. In addition to a variety of graduate programs in Modeling and Simulation, ODU's MSVE Department offers an online Master of Engineering (M.E.) especially for working professionals.

Phone: (757)683-5946
Graduate Program Director: Dr. Yuzhong Shen • *Email:* yshen@odu.edu
Academic Advisor and Program Manager (includes Undergraduate Program): Trey Mayo • *Email:* rmayo@odu.edu

SIMVENTIONS / M&S CATALOG   TABLE 16

The Defense M&S Catalog, which has just recently achieved Full Operational Capability (FOC), is an intuitive web-based, GOTS tool for program managers, engineers, and acquisition professionals to discover and reuse M&S assets. The Defense M&S Catalog collects and organizes information on M&S assets from Government, industry, and academia. Access is granted to anyone with a CAC or approved security certificate. New features allow users to create, publish, manage, and report assets utilizing real-time visual analytics and metrics. Find out how the Defense M&S Catalog can strengthen your program. Stop by MODSIM Booth #16 for a hands-on demo.

Contact: Dori Moxley • *Phone: (*540)372-7727 • *Email:* dmoxley@simventions.com

VIRGINIA BEACH EDC   TABLE 3

We assist the business community by providing management, technical, and other resources. Through our department and our allies, various programs are available for small and startup firms, as well as women-and minority-owned companies of any size. Our department is charged with expanding and diversifying the tax base and employment opportunities for the city through various business development activities. Specific details about our City and programs can be found at www.yesvirginiabeach.com. We also have an Apple iPad App that provides excellent insights about our community.

Contact: Phone: (757)385-6464 • *Email:* ecdev@vbgov.com to learn more about our business advantages.

VT MÄK   TABLE 12

VT MÄK offers a complete line of software to address your simulation challenges. Whether you're developing a simple simulation scenario or dealing with complex program requirements, MÄK products are easy to use and scale to meet the full range of simulation needs. Our primary users are in the aerospace, defense, and transportation industries, yet our products and services can help customers anywhere modeling and simulation is needed to train, plan, analyze, experiment, prototype, and demonstrate. MÄK software has been used to develop solutions in the areas Air Traffic Management, Command and Control, Homeland Security, and Space.

Contact: Danny Williams • *Phone:* (240)676-1565 • *Email:* dwilliams@mak.com

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