Agenda

Monday, 20 May

0800 – 1600 **Registration Open**
GRANBY BALLROOM FOYER

1200 – 1600 **Exhibit Hall Open**
GRANBY BALLROOM FOYER

1230 – 1245 **MODSIM World 2024 Welcome & Opening Remarks**
GRANBY BALLROOMS ABCD

Welcome & Opening Remarks
Julian Abich IV, Ph.D.
2024 Conference Chair, Quantum Improvements Consulting

Scholarship Awards Presentation & Introduction of Congressional Keynote Speaker
Linda Brent, Ed.D.
Strategic Planning, National Training & Simulation Association (NTSA), Chief Executive Officer, The ASTA Group, LLC

1245 – 1300

Congressional Keynote Address
GRANBY BALLROOMS ABCD

The Hon. Bobby Scott
U.S. Congress, 3rd District, VA

1300 – 1345

Special Event: Women in Defense Fireside Chat
GRANBY BALLROOMS ABCD

In this panel, defense leaders in modeling and simulation will share experiences from their perspective as women. Topics will include mentoring, challenges, and opportunities, discussed in the context of their personal career journeys. In addition, we will discuss the future of modeling and simulation and how emerging technology might change the career landscape for women and more broadly.

Jennifer Solberg, Ph.D.
CEO, Quantum Improvements Consulting
Moderator

LtCol Alexandra Carico, USSF
USSPACECOM Desk Officer, Joint Exercise Division

CDR Christina Carino, USN
Naval SurfaceWarefare Center Dahlgreen Division (NSWCDD), Dam Neck Activity

Amy Grom
Technical Teams Branch Chief, Environment Operations Division (EOD), Joint Staff J7

Elizabeth Owens Lape, Ph.D.
Sr. Education Specialist for Joint Staff J7 Joint Training, Plans and Operations Division

1345 – 1415

Special Event: Intro to Next Big Thing 2024 – AI at Work
GRANBY BALLROOMS ABCD

One of the NTSA "Next Big Thing" topics for 2023 was artificial intelligence – and at I/ITSEC more than 600 attendees joined a curated list of thought leaders and experts to explore the ethics, policies, opportunities, and challenges associated with AI. In 2024, AI continues to dominate the conversation. So, while I/ITSEC 2024 The Next Big Thing will again focus on AI, this year we will move beyond high level discussions and focus on how AI can create value NOW – in government and Industry. Leading up to The Next Big Thing at I/ITSEC 2024, NTSA will host a series of events exploring this year's topic, starting with this year's inaugural event at MODSIM World.

Bob Kleinhample, CMSP
President, RCK Simulations
Moderator

1415 – 1445

Networking Break & Dedicated Exhibit Time
GRANBY BALLROOM FOYER

Agenda

1445 – 1515

Special Event: Doing Business with the Government
GRANBY BALLROOMS ABCD

Doing business with the Government is simple, it's just sales. But it's far from easy, with the mountain of jargon, opaque processes, and myriad regulations, it's a wonder anyone survives. Join us for a few quick pointers.

John Ferry
President, Trenchant Analytics; CEO, UseRogue.com

1515 – 1615

Special Event: One-Minute Spotlight
GRANBY BALLROOMS ABCD

In this dynamic session, presenters distill their professional essence into a single slide and 60 seconds. Presenters will introduce themselves, outline their services or capabilities, and share their conference goals. Whether you're a researcher, entrepreneur, or industry professional, this rapid-fire spotlight ensures maximum impact in minimal time.

Julian Abich IV, Ph.D.
2024 Conference Chair, Quantum Improvements Consulting
Host

1615

No Host Social
THE GRAIN RESTAURANT

Tuesday, 21 May

0730 – 1730

Registration Open
GRANBY BALLROOM FOYER

0730 – 0830

Continental Breakfast
GRANBY BALLROOM FOYER

0830 – 1730

Exhibit Hall Open
GRANBY BALLROOM FOYER

0830 – 0845

Day Two Welcome & Opening Remarks
GRANBY BALLROOMS ABCD

Opening Remarks & Introduction of Industry Keynote Speaker
Julian Abich IV, Ph.D.
2024 Conference Chair, Quantum Improvements Consulting

0845 – 0915

Industry Keynote Address
GRANBY BALLROOMS ABCD

Jennifer Solberg, Ph.D.
CEO, Quantum Improvements Consulting

0915 – 0945

Government Keynote Address
GRANBY BALLROOMS ABCD

Brigadier General Dominique Luzeaux
Digital Transformation Champion and Special Advisor to Supreme Allied Commander Transformation

0945 – 1000

Networking Break & Dedicated Exhibit Time
GRANBY BALLROOM FOYER

1000 – 1130

Special Event: The Simulation Century – What Does Education Need from AI in the Simulation Century?
GRANBY BALLROOMS ABCD

This is our twelfth annual session to address the growing issue of managing the human/machine interface as we hurtle towards the Singularity and the Metaverse. We will continue our discussion of how to achieve fluency with smarter balance between humans and machines to optimize outcomes. The Simulation Century Panel presentations this year will focus on the challenges and opportunities of implementing AI and simulation in education environments.

What Does AI Want?
Richard Boyd
CEO, Ultisim, Inc.
Moderator

Unlocking the Metaverse: Using AI and Simulation to Define a Preferred Future
Paul Doherty
AIA, IFMA Fellow, DFC Senior Fellow

Streaming XR
David Rubright
Account Executive, HoloLight

AI and Designing the Future
Tish Shute
Founder, Augmented World Expo

1130 – 1245

Lunch & Dedicated Exhibit Time
GRANBY BALLROOM E & GRANBY BALLROOM FOYER

Paper Session I – Industry Track: Simulating the Future: Innovations in Vehicle Dynamics and Power Systems
FUSION

1245 – 1310   **Re-spatializing Gangs: An Exponential Random Graph Model of Twitter Data to Analyze the Geospatial Distribution of Gang Member Connections**

Ryan J. Roberts. Ph.D.
Gardner-Webb University

1310 – 1335   **Application of Immersive Technologies in the Visualization of Partial Discharges in Power Transformers: A Significant Advance in Supporting Maintenance Practices**

Gerson Lima, Ph.D. CGWorks Virtual Reality	**Mateus Flausino** CGWorks Virtual Reality
Alexandre Cardoso, Ph.D. Federal University of Uberlandia	**Lucas Freitas** CGWorks Virtual Reality
Joao Feitosa Federal University of Uberlandia	**Helder Paula, Ph.D.** Federal University of Uberlandia

1335 – 1400   **Creating Virtual World Environments for Ocean Vehicles**

Ryan Capozzi Unmanned Systems	**Ian Friedrichs** Unmanned Systems
Amanda Costa Unmanned Systems	

Paper Session I – Defense Track: Advanced Simulation Technologies and Frameworks
ENERGY

1245 – 1310   **OptDef: Optimization & Analysis for Defense Simulation Models**

Jose Ramirez, Ph.D. OptTek Systems, Inc.	**Benjamin Thengvall, Ph.D.** OptTek Systems, Inc.

1310 – 1335

Modeling Human Behavioral Responses to Targeted Violence

Rainer Hilscher, Ph.D.
RTI International

William Parkin
RTI International

Matthew DeMichele
RTI International

1335 – 1400

Harnessing Deep Learning for Enhanced Military Simulations: A Comprehensive Approach

Luis Velazquez
U.S. Marine Corps Systems Command

Paper Session I – Training & Education Track: Development and Evaluation of Training Simulations
MOMENTUM

1245 – 1310

CyberSim RL: A Simulation Environment to Train, Test, and Evaluate Automated Cybersecurity Offensive Agents and Digital Twins

Sean Mondesire, Ph.D.
University of Central Florida

Daniel Muller
University of Central Florida

1310 – 1335

Immersive Virtual Reality-Based Module for Cleanroom Fabrication Training: Enhanced Interactions by Using Controllers, Navigation, and Dynamic Simulations

Jordan Junior Atta Nuako
Norfolk State University

Michael Kozhevnikov
Norfolk State University

1335 – 1400

Visualizing Communication Data to Augment Squad Performance Evaluations

Michael King, Ph.D.
Quantum Improvements Consulting

Eric Sikorski, Ph.D.
Quantum Improvements Consulting

Gregory Goodwin, Ph.D.
U.S. Army Combat Capabilities Development Command – Soldier Center (DEVCOM SC)

Clifford Hancock
U.S. Army Combat Capabilities Development Command – Soldier Center (DEVCOM SC)

Julian Abich IV, Ph.D.
Quantum Improvements Consulting

Meghan O'Donovan
U.S. Army Combat Capabilities Development Command – Soldier Center (DEVCOM SC)

1400 – 1415

Networking Break & Dedicated Exhibit Time
GRANBY BALLROOM FOYER

Paper Session II – Industry Track: Leveraging AI and Simulation Data for Immersive Training and Analytics
FUSION

1415 – 1440   ### Synthetic Computer Vision Data Helps Overcome AI Training Challenges

Mark Hogsett
Rendered.ai

Christopher Andrews
Rendered.ai

1440 – 1505   ### Digital Twins of the Battlespace – Data and Formats for Enhanced Modeling and Simulation

Randall Toth
Maxar/MST

Ronald Moore
Maxar/OWT

1505 – 1530   ### Interactive Coaching of Highly Independent Participants in AR

Richard St. Augustine
Paratus Associates

Richard Goad
Paratus Associates

Paper Session II – Defense Track:
Strategic Military and Operational Insights
ENERGY

1415 – 1440

Preliminary Assessment of Single Amphibious Integrated Precision Augmented Reality Navigation System

Victoria Jolliff
Old Dominion University

Kevin Hernandez
VR Rehab, Inc.

Stacie Ringleb, Ph.D.
Old Dominion University

Peter Crane, Ph.D.
VR Rehab, Inc.

1440 – 1505

Simulation Experimentation of Swarms

Melissa Jablonski
U.S. Army DEVCOM Armaments Center

Michael McBride
U.S. Army DEVCOM Armaments Center

Elizabeth Mezzacappa, Ph.D.
U.S. Army DEVCOM Armaments Center

Ross Arnold, Ph.D.
U.S. Army DEVCOM Armaments Center

1505 – 1530

Building a Domain Agnostic Framework for Efficient and Effective Risk Communication Messages

Ross Gore, Ph.D.
Old Dominion University

Christopher Lynch, Ph.D.
Old Dominion University

Ann Marie Reinhold, Ph.D.
Montana State University

Clemente Izurieta, Ph.D.
Montana State University

Barry Ezell, Ph.D.
Old Dominion University

Jessica Cordner
Old Dominion University

Elizabeth Shanahan, Ph.D.
Montana State University

Virginia Zamponi
Old Dominion University

Erik Jensen
Old Dominion University

Madison Munro
Montana State University

Paper Session II – Training & Education Track: Simulation Techniques in Education
MOMENTUM

1415 – 1440 **Developing an Executive Education Simulation Using Game Design Methodologies**

Gul Ayaz
ODU Enterprise Research & Innovation

Rafael Diaz
ODU Enterprise Research & Innovation

Katherine Smith, Ph.D.
ODU Enterprise Research & Innovation

Joshua Behr
ODU Enterprise Research & Innovation

1440 – 1505 **Converting Traditional Training to Serious Gameplay**

Matthew Becchio
Engineering & Computer Simulations, Inc.

Alexis Damron
Engineering & Computer Simulations, Inc.

Madison Quinn
Engineering & Computer Simulations, Inc.

Shane Taber
Engineering & Computer Simulations, Inc.

Samantha Beigel
Engineering & Computer Simulations, Inc.

1505 – 1530 **Balancing Immersion and Comfort in Immersive Virtual Reality Training: The Role of Instructor's Movement and Trainee's Spatial Perspective**

Steve Adjetey Adjei
Norfolk State University

Michael Kozhevnikov, Ph.D.
Norfolk State University

1530 – 1545 | ## Networking Break & Dedicated Exhibit Time
GRANBY BALLROOM FOYER

1545 – 1700 | ## Special Event: AI at Work – Applications of AI in Government and Industry
GRANBY BALLROOMS ABCD

This year's Next Big Thing will go beyond policy and theory to dive into specific applications of AI being used today to create tangible value. Join this panel of leaders in government and industry to explore how AI is being used right now to improve efficiencies, automate processes, and create new monetization strategies across the world of modeling and simulation.

Bob Kleinhample, CMSP
President, RCK Simulations
Moderator

Greg Corder
Shore Based Training Program Director, NSWCDD Dam Neck Activity

John Ferry
President, Trenchant Analytics, CEO, UseRogue.com

Shawn Weil, Ph.D.
Chief Growth Officer, Aptima

1700 – 1830 | ## Opening Reception
GRANBY BALLROOM FOYER

Welcome Remarks
Julian Abich IV, Ph.D.
2024 Conference Chair, Quantum Improvements Consulting

Networking Reception Sponsor
VMASC

Wednesday, 22 May

0730 – 1500 | ## Registration Open
GRANBY BALLROOM FOYER

0730 – 0830 | ## Continental Breakfast
GRANBY BALLROOM FOYER

0830 – 1500 | ## Exhibit Hall Open
GRANBY BALLROOM FOYER

0830 – 0845

Day Three Welcome & Opening Remarks
GRANBY BALLROOMS ABCD

Opening Remarks

Julian Abich IV, Ph.D.
2024 Conference Chair, Quantum Improvements Consulting

0845 – 1015

Special Event: Future Needs of Adaptive Training
GRANBY BALLROOMS ABCD

Adaptive training and intelligent tutoring capabilities are continually emphasized in future-defined visions of military training and education. However, we've only seen incremental progress over the years without well-established scalable solutions. With recent advancements in Artificial Intelligence (AI) and supporting Open System Architectures, these forward-leaning concepts have the potential to be realized through focused research and strategic implementation. In this expert panel, we center on next-generation training management tools and ongoing research efforts across the services dedicated to modernizing adaptive, data-driven solutions. Topics include data-driven infrastructure and interoperability, multi-modal methods to drive objective assessment, personalized feedback and coaching, immersive content generation, training decision support tools, and self-optimizing systems. Research agendas will be discussed, along with strategies and challenges associated with transition and implementation at scale.

Benjamin Goldberg, Ph.D.
Senior Scientist, Adaptive and Intelligent Training Systems (AITS) Team, U.S. Army DEVCOM
Moderator

Glenn Gunzelmann, Ph.D.
711 Human Performance Wing, USAF/AFRL

Joseph Lomangino
Project Tripoli Team Leader, Marine Corp's LVC-TE

James Pharmer, Ph.D.
Chief Scientist, NAWCTSD

CDR Liza Stone, USN
Nursing Director, Healthcare Simulation and Bioskills Training Center, Naval Medical Center Portsmouth

1015 – 1030 ## Networking Break & Dedicated Exhibit Time
GRANBY BALLROOM FOYER

Paper Session III – Industry Track: Advances in Modeling and Simulation for Traffic Management and Control Systems
FUSION

1030 – 1055 ### A Modeling & Simulation (M&S) Framework to Assess Navigational Benefit and Distraction Potential for Specific Service Signs using Simulated Driving Performance and Self-reported Cognition

Kevin Hulme, Ph.D., CMPS
The Stephen Still Institute for Sustainable Transportation and Logistics (SSISTL)

Rachel Su Ann Lim
SickKids | The Hospital for Sick Children

Roman Dmowski
Robert Bosch

Mahdi Ebnali, Ph.D.
STRATUS Center for Medical Simulation at Harvard Medical School

Meredith Finn
McGard, LLC

Jiajun Pang
Department of Civil, Structural, Environmental Engineering, University at Buffalo

Gongda Yu
Department of Civil, Structural, Environmental Engineering, University at Buffalo

Huei-Yen Chen, Ph.D.
Department of Industrial and Systems Engineering, University at Buffalo

Kuan-Ting Chen, Ph.D.
Virginia Tech Transportation Institute (VTTI)

1055 – 1120 ### Analysis of a Model Predictive Control Mixed Integer Linear Program Model for Air Traffic Management

Rex Kincaid, Ph.D.
William & Mary

Logan Wolf
William & Mary

1120 – 1145 ### Fuelish Erros: Taking the Risk out of Hazardous Petroleum Specialist Training with Interactive Simulations

Gayla Thompson
Potawatomi Training

Phil DeAlmedia
Potawatomi Training

Paper Session III – Defense Track: Human Factors and Training Innovations
ENERGY

1030 – 1055

Beyond Assessment: Accelerating Simulation's Readiness Benefits with Competency Profiles

Benjamin Bell, Ph.D.
Eduworks Corporation

Debbie Brown
Eduworks Corporation

Matthew Ross
Eduworks Corporation

Ronald Ray
Eduworks Corporation

1055 – 1120

What Can, What Could, What Should… Simulation Supporting Delivery of Enhanced Effectiveness of JFS Training in a Live Environment?

Maximilian Jakob
Industrieanlagenbetriebsgesellschaft mbh

Florian Göttinger
Industrieanlagenbetriebsgesellschaft mbh

1120 – 1145

The Complete C5ISR Architecture Tool (TC2AT)

John Lock
Paratus Associates, LLC

Richard Goad
Paratus Associates, LLC

Paper Session III – Training & Education Track:
Integration of Technology in Training Programs
MOMENTUM

1030 – 1055
Integration of Simulation Techniques for the Development and Validation of Artificial Neural Networks in Modeling Complex Dynamic Systems

Kate Cloutier
Old Dominion University

Drew Landman, Ph.D.
Old Dominion University

Mileta Tomovic, Ph.D.
Old Dominion University

1055 – 1120
Employing Manned and Autonomous Machines: Implications for Live, Virtual, and Constructive (LVC) Training Simulations

Tim Cooley, Ph.D.
DynamX Consulting

Ivar Oswalt, Ph.D., CMSP
The MIL Corporation

1120 – 1145
Reality Capture for Electrical Substations with Integrated Spherical Images and GeoBase Data in a GIS Platform

Gerson de Lima
Computer Graphics Works

Edgard Lamounier
UFU - Universidade Federal de Uberlandia

Claudemir Alves
UFU - Universidade Federal de Uberlandia

Davidson Campos
Eletronorte, Eletrobras

Gabriel Cyrino
UFU - Universidade Federal de Uberlandia

Jader de Oliveira
Eletronorte, Eletrobras

Alexandre Cardoso
UFU - Universidade Federal de Uberlandia

Luis dos Santos
Eletronorte, Eletrobras

1030 – 1145
Special Event: STEM Event
GRANBY BALLROOM FOYER

The MODSIM STEM event provides a unique opportunity to contribute directly to the school experience of youth who are beginning to formulate their dreams for the future. During the MODSIM STEM event, approximately 30 local high school students will get the opportunity to see firsthand the world of M&S. Students will rotate through hands-on M&S demonstrations provided in the exhibit hall to see STEM in action.

1145 – 1300
Lunch & Dedicated Exhibit Time
GRANBY BALLROOM E & GRANBY BALLROOM FOYER

Paper Session IV – Industry Track: Shaping the Future: Digital Twins and Simulation in Manufacturing
FUSION

1300 – 1325

A Micro-Discrete Event Simulation Environment for Production Scheduling in Manufacturing Digital Twins

Sean Mondesire. Ph.D.
University of Central Florida

Brian Tse
University of Central Florida

Tori Wright
University of Central Florida

Emmanuel Nsiye
University of Central Florida

1325 – 1350

Enhancing Digital Transformation Through Maturity Modeling

Claire Hughes
Design Interactive

Kay Stanney, Ph.D.
Design Interactive

Paper Session IV – Defense Track: Data Analytics and Performance in Modeling
ENERGY

1300 – 1325

Phase One of a Context-Aware Data Mesh

Erica Dretzka
U.S. Department of Defense

1325 – 1350

Localized Observation Abstraction Using Piecewise Linear Spatial Decay for Reinforcement Learning in Combat Simulations

Scotty Black, Ph.D. Candidate
Naval Postgraduate School

Christian Darken
Naval Postgraduate School

1350– 1415

Smart Munitions Effectiveness Model

Evelyn Welling
DEVCOM, Armaments Center

Antonio Aguirre
DEVCOM, Armaments Center

Paper Session IV – Training & Education Track: Training through Simulation
MOMENTUM

1300 – 1325 **Human Testing using Large-Language Models: Experimental Research through the Development of a Security Awareness Controls Framework**

Sarah Assaf
University of New South Wales Canberra

Timothy Lynar
University of New South Wales Canberra

1325 – 1350 **Cybersickness Between a Virtual and Mixed Reality Flight Simulator – A Comparative Study**

Christian Lindberg
Swedish Defence Research Agency (FOI)

Guilherme Elçadi, Ph.D.
Swedish Defence Research Agency (FOI)

Jouni Lindqvist
Swedish Defence Research Agency (FOI)

Robert Ramberg, Ph.D.
Swedish Defence Research Agency (FOI)

Robin Dahlkvist
Swedish Defence Research Agency (FOI)

1350 – 1415 **Automating Analysis for Efficient and Effective Learning Solutions**

Claudia Escribano
C² Technologies, Inc

Stephen Godwin
C² Technologies, Inc

Cody Caddell
C² Technologies, Inc

Beth Myers
C² Technologies, Inc

1415 – 1430 **Networking Break & Dedicated Exhibit Time**
GRANBY BALLROOM FOYER

1430 – 1600

Special Event: NATO Industry Advisory Group
GRANBY BALLROOMS ABCD

Description

LTC Jason Frisco, USA
Programme Director, NATO NexGen M&S
Moderator

COL Stephen Banks, USA
Branch Head for Modeling and Simulation Learning Technologies, NATO HQSACT

Andrew Bonica
Senior Client Executive, Dassault Systemes Government Solutions

Matt Martin
Strategic Developement, CAE USA

Agatino Mursia
Modeling and Simulation, Leonardo Spa

Robbie Phillips
Advanced Concepts, Lockheed Martin

Robert Seigfried
Managing Director, Aditerna GmbH

1600

Closing Remarks & Adjourn
GRANBY BALLROOMS ABCD