

# *Final Program*

## **The Huntsville Simulation Conference *HSC 2006***

### **The Advanced Research Center (ARC)**

October 17, 2006 (Classified Sessions) – 1:30 to 3:30

### **The Huntsville Marriott**

October 18, 2006 – 9:00 to 6:00

October 19, 2006 – 8:30 to 1:30

#### **Invited Keynote Speaker: Mr. Greg Tackett**

Director, US Army AMRDEC System Simulation and Development

#### **Invited Luncheon Speaker: Dr. Donald Monell**

NASA Marshall Space Flight Center

#### **Invited Luncheon Speaker: Dr. Robert M. Howe**

Professor Emeritus of Aerospace Engineering, University of Michigan

#### **Invited Speaker: Dr. Kenn Atkinson**

Defense Modeling and Simulation Office (DMSO)

#### **Conference General Chairman: Joseph S. Gauthier**

**[Gauthier Simulation, Inc.](#)**

#### **Conference Program Chairman: Dr. Bruce Fairchild**

**Past President, The Society for Modeling and Simulation International**

Primary Sponsor

**[The Society for Modeling and Simulation International](#)**

P.O. Box 17900, San Diego, CA 92177

(858) 277-3888; [www.scs.org](http://www.scs.org)

Hosted by:

**[The Alabama Modeling and Simulation Council](#)**

## **CONFERENCE REGISTRATION**

**Wednesday, October 18, 2006, 8:00p.m. to 4:00p.m.**

**Thursday, October 19, 2006, 8:00a.m. to 11:00a.m.**

Conference pre-registration is conducted through the HSC web site at [www.scs.org/hsc](http://www.scs.org/hsc). Pre-registration closes on October 8. After that, registration is on site, in the meeting room area at the Marriott hotel.

## **CONFERENCE SOCIAL**

**Wednesday, October 18, 2006, 5:00p.m. to 6:30p.m.**

### **Exhibit/Registration Area**

The conference social event is an excellent opportunity to network with the other conference participants and visit the exhibitors. There will be heavy hors d'oeuvres and a cash bar.

## **GOLD LEVEL SPONSORS**

[Aegis Technologies Group](#)

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## **SILVER LEVEL SPONSORS**

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## **PROFESSIONAL SOCIETY CO-SPONSORS**

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## **EXHIBITORS**

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## **CONFERENCE COMMITTEE**

The Society for Modeling and Simulation International wishes to thank and acknowledge the following individuals and their respective organizations for their contributions to the success of this conference:

Paul Agarwal, COLSA Corporation  
Demetrius Bell, EDO-CAS, Inc.  
Alleen Bray, The Aegis Technologies Group  
Harold Dessau, EDO-CAS. Inc.  
Bruce Fairchild, Society for Modeling and Simulation International  
Gloria Flowers, U.S. Army Space and Missile Defense Command  
Bruce Fowler, U.S. Army Research, Development, and Engineering Command  
Jean Graffagnini, U.S. Army Research, Development, and Engineering Command  
Sharon Hardy, Computer Sciences Corporation  
James Head, U.S. Army U.S. Army Research, Development, and Engineering Command  
Michelle Herman, Computer Sciences Corporation  
Keith Jodus, U.S. Army Research, Development, and Engineering Command  
Wade Kendrick, Summit Research Corporation  
Billette Kimbrough, U.S. Army Space and Missile Defense Command  
Lisa Laurendine, Missile Defense Agency  
Eric Lester, IAVO Research  
Mark McDaniel, Science Applications International Corporation  
Joe Moran, U.S. Army Research, Development, and Engineering Command  
Claudette Owens, U.S. Army Space and Missile Defense Command  
Edwin Núñez, COLSA Corporation  
James Nutaro, Oak Ridge National Laboratory  
Hetal Patel, Gray Research, Inc.  
Gene Peresich, Boeing  
John Regner, Teledyne Brown Engineering  
Bernard Schroer, University of Alabama in Huntsville  
Alan M. Shih, University of Alabama at Birmingham  
Nick Vamivakas, Raytheon  
Ralph Weber, Computer Sciences Corporation  
Bill Wessels, BAE Systems  
Brian Williams, Westar  
Chris Willisson, COLSA Corporation  
Jeanette Wilson, Trideum Corporation  
James Young, COLSA Corporation

## **PROFESSIONAL ENGINEER CONTINUING EDUCATION UNITS**

Attendance at this conference can be credited towards Professional Engineer Continuing Education Units (CEU).

## **CERTIFIED MODELING AND SIMULATION PROFESSIONAL RECERTIFICATION UNITS**

This conference qualifies for Recertification Units (RU's) for the Certified Modeling and Simulation Professionals (CMSP) as administered by the Modeling and Simulation Professional Certification Commission (MSPCC – [www.SimProfessional.org](http://www.SimProfessional.org)).

## *The Sticks They Beat Me With*

**Invited Keynote Speaker: Greg Tackett**  
**Director, US Army AMRDEC System Simulation and Development**  
**Wednesday, October 18, 2006, 9:00a.m.**  
**Salon A, B, and C**

Mr. Tackett describes this presentation is a thinly veiled autobiography that attempts to walk the precarious balance of offering lessons learned while trying to avoid telling the simulation community how to suck eggs. The presentation is bold in its willingness to substitute humor for content if that helps keep the audience engaged.

Mr. Tackett has been a member of the Senior Executive Service since the US Army bestowed the honor upon him as a Christmas present last year. He serves as the Director of the System Simulation and Development Directorate (SSDD) at the Aviation and Missile Research, Development, and Engineering Center (AMRDEC). Mr. Tackett has served in SSDD since 1998, and has worked in the field of Modeling and Simulation since he began his career in 1982. His career began in serving for seven years as a civil servant for the US Navy at Naval Surface Warfare Center, where he conducted performance assessments for air defense systems. He moved to Huntsville in 1989, where he worked in the Line-of-Sight Anti-Tank project office before coming over to the lab as the Rapid Force Projection Initiative simulation manager 1994-1998. Mr. Tackett currently resides atop Green Mountain with his wife and youngest daughter. His oldest daughter has recently escaped home to reside at Furman University (Go F U !)

**Plenary Session Sponsored by**  
**[Science Applications International Corporation \(SAIC\)](#)**

# *A History of the Use of Computers Since World War II in Real-time Hardware-in-the-loop Simulation*

**Invited Luncheon Speaker: Dr. Robert M. Howe**  
**Professor Emeritus of Aerospace Engineering, University of Michigan**  
**Thursday, October 19, 2006, 12:00p.m.**  
**Salon D, E, and F**

The development and use of computers for hardware-in-the-loop simulation will be described, starting with electronic analog computers and early digital computers and extending to the current use of microprocessors for this important computer-application area. A few anecdotal descriptions of successes and failures of real-time simulation will be included. The importance of understanding the dynamic errors inherent in real-time computer simulation will also be described. Finally, some future trends in the use of real-time computer simulation will be discussed

Dr. Howe is Professor Emeritus of Aerospace Engineering at the University of Michigan, where he served on the faculty for 41 years, including 15 as departmental chairman. His academic degrees include a BS (EE) from Caltech, an AB (Physics) from Oberlin College, an MS (Physics) from the University of Michigan, and a PhD (Physics) from M.I.T. His interests include real-time simulation, as well as flight dynamics and control, and he is the author of over 100 technical papers and one book on analog computers. He served as first national chairman of Simulation Councils, Inc., the predecessor of the Society for Computer Simulation. His many honors include the 1983 AIAA deFlorez Training Award for Flight Simulation, and the 1978 Award for Meritorious Civilian Service for "outstanding contributions in guidance and control, and flight simulation" while a member of the USAF Scientific Advisory Board. He has served as a technical consultant to many companies. His technical society memberships include AIAA (Associate Fellow), SCS, and IEEE (Fellow). He was a "founder" in 1957 of Applied Dynamics International, an Ann Arbor computer company for which he continues to consult since his retirement in 1991 from the University of Michigan.

**Invited Luncheon Speaker: Dr. Donald Monell  
NASA Marshall Space Flight Center  
Wednesday, October 18, 2006, 12:00p.m.  
Salon D, E, and F**

**Invited Speaker: Dr. Kenn Atkinson  
Defense Modeling and Simulation Office (DMSO)  
Wednesday, October 18, 2006, 1:30p.m. to 2:00p.m.  
Salon A, B, and C**

**Fourth Annual [Alabama Modeling and Simulation Council \(AMSC\)](#) Meeting**

**Thursday, October 19, 2006,  
1:30p.m. to 5:00p.m.  
Salon A, B, and C**

**ADMITTANCE: Free to All**

Are you a modeling and simulation professional? Do you use computer simulation for analysis, systems engineering, test and evaluation, training or military or commercial operations? Are you curious about the state of modeling and simulation technology, profession, industry and marketplace? Then attend the fourth annual meeting of the Alabama Modeling and Simulation Council – held again this year in association with the Huntsville Simulation Conference, for which it is a proud host.

Alabama is a world leader in modeling and simulation, and the AMSC is a not-for-profit organization dedicated to the future of modeling and simulation in Alabama. A cooperative forum of Government, industry, academic and professional societies as well as interested individual practitioners, the agenda of the AMSC covers technology, professional development and education, industrial development, and business development opportunities for its member organizations.

This meeting will anchor the HSC technical conference - there is no fee, and everyone is welcome to attend whether or not you are registered for the HSC or a formal member of the AMSC. For information about the AMSC meeting, please contact Bill Waite or Charlotte Sallas at 256-922-0802. Whether you do business in Alabama or not, you will want to attend the AMSC meeting for a view of one of the world's most robust and exciting information-based technologies.

**THE ADVANCED RESEARCH CENTER (ARC)  
CLASSIFIED PRESENTATIONS**

*Session Chair: Marshall McBride, U.S. Army Space & Missile Defense Future Warfare Center*

**TUE, 1:30 > Welcome**

**TUE, 1:45 > Use of Evolutionary Computing to Model Bi-Directional Reflection Distribution Functions**

*Edwin Nunez, Edwin Roger Banks, Paul Agarwal, COLSA Corporation*

*James Evans, EDO-CAS Incorporated*

**TUE, 2:15 > Determination of the LRCS for a Frustum Target Base Coupled with Different Nose Tips using the Phong Model**

*James Evans, EDO-CAS Incorporated*

**TUE, 2:45 > Advanced Absorber Technology for RF HWIL Simulation Facilities**

*Dean Marshall, Raytheon*

***ENTERPRISE*  
GENETIC PROGRAMMING**

*Session Chair: Marshall McBride, U.S. Army Space & Missile Defense Future Warfare Center*

**WED, 10:30 > Floating-Point Genetic Algorithm for Translational Motion Estimation**

*Hussein Alzoubi, W. David Pan, University of Alabama in Huntsville*

**WED, 11:00 > Using Genetic Algorithms (GA) to Optimize Competing System Requirements**

*Bradley Schricker, AT&T Government Solutions, Inc.*

***ENTERPRISE*  
MODELING AND SIMULATION OF  
POWER ELECTRONIC-BASED SYSTEMS**

*Session Chair: Roy Crosbie, California State University, Chico*

*Session Chair: Narain Hingorani, Consultant*

**WED, 1:30 to 5:00 > Panel Discussion**

*Roger Dougal, University of South Carolina*

*Terry Ericson, Office of Naval Research*

*Robert M Howe, University of Michigan*

*Darshana Muthumuni, Manitoba HVDC Research Center*

*Steve Woodruff, Florida State University*

***ENTERPRISE*  
DISTRIBUTED SIMULATION**

*Session Chair: James Head, U.S. Army U.S. Army Research, Development, and Engineering Command*

**THU, 9:00 > Distributed Interactive Simulation in Space Dwelling Groups**

*Eric Gasior, Kevin Spence, Institutes for Behavior Resources*

*Robert Hienz, Steven Hursh, Joseph Brady, Institutes for Behavior Resources and The Johns Hopkins University*

**ENTERPRISE**  
**COMPUTATIONAL DYNAMICS SYSTEMS**  
*Session Chair: Edwin Roger Banks, COLSA Corporation*

**THU, 10:30 > Validation of Convective Initiation and Character Prediction Using Geostationary Operational Environmental Satellites (GOES) Derived Convective Initiation Scores with Radar Derived Winds**

*Leslie Litten, John Mecikalski, University of Alabama in Huntsville*  
*Kristopher Bedka, University of Wisconsin - Madison*

**THU, 11:00 > A Comparative Study of Wireless Propagation Simulation Methodologies: Ray Tracing, FDTD, DEVS**

*Phani Teja Kuruganti, James Nutaro, Oak Ridge National Laboratory*

**THU, 11:30 > Computer Simulations of Three Fast Imaging Techniques Used In Phase Contrast Magnetic Resonance Imaging**

*Longchuan Li, University of Alabama at Birmingham*  
*Mark Doyle, Geetha Rayarao, Allegheny Singer Research institute*  
*Yasushi Ito, Andreas Anayiotos, University of Alabama at Birmingham*  
*Eduardo Kortright, Grove City College*

**CHALLENGER**  
**NETWORK SIMULATION**

*Session Chair: Claudette Owens, U.S. Army Space and Missile Defense Command*

**WED, 10:30 > Routing Algorithms for Voice Communication in Air Traffic Services Networks**

*Thomas Rausch, Johannes Schmidt, Vienna Univ. of Technology*

**WED, 11:00 > An Aircraft Network Wireless Link Performance Simulation**

*Douglas Haanpaa, Charles Cohen, Cybernet*  
*Tony Michel, BBN Technologies*

**WED, 11:30 > Functional Capabilities of the Space Communications Effects Federation**

*Veronica Collins, SMDC Future Warfare Center*

**CHALLENGER**  
**VIRTUAL ENVIRONMENTS AND VISUALIZATION**  
*Session Chair: Sharon Hardy, Computer Sciences Corporation*

**WED, 1:30 > Virtual Visualization of GIS data for Infrastructure**

*Scott Allman, AEGIS Technologies*  
*Scott David, CSC*

**WED, 2:00 > A System for Evaluating Training Transfer Between Virtual and Live Urban Environments**

*Richard Schaffer, Lockheed Martin*  
*Joseph Cohn, Naval Research Laboratory*  
*Adam Hoover, Clemson University*  
*Hesham Fouad, VRsonic, Inc.*  
*Glenn Martin, Institute for Simulation and Training*  
*Laura Milham, Meredith Carroll, Design Interactive, Inc.*

**CHALLENGER**  
**VALIDATION, VERIFICATION AND ACCREDITATION**

*Session Chair: Demetrius Bell, EDO-CAS, Inc.*

**WED, 3:30 > Incremental Quantification of VV&A “Levels” for Integrated Management of Modeling & Simulation Tools**

*Bobby Hartway, Danny Thomas, Lisa Caine, The AEgis Technologies Group*  
*Joe Hale, NASA Marshall Space Flight Center*

**WED, 4:00 > An Example of Preserving Simulation Credibility When Re-hosting to New Computing Resources**

*Patrick White, Jana Bladow, AMRDEC*  
*Paul Cleveland, Adam Sampley, Torch Technologies*

**WED, 4:30 > Application of AHP Methodology to Incremental VV&A of Modeling and Simulation Tools**

*Bobby Hartway, Bob Gravitz, Lisa Caine, Danny Thomas, The AEgis Technologies Group*  
*Joe Hale, NASA Marshall Space Flight Center*

**CHALLENGER**  
**MANUFACTURING**

*Session Chair: Eric Zabre, Instituto de Investigaciones Eléctricas*

**THU, 8:30 > Vendor Managed Inventory Simulation Model for Just-in-Time Manufacturing**

*Sherry Starling, Gregory Harris, Bernard Schroer, University of Alabama in Huntsville*

**THU, 9:00 > The Toyota Production System: Computer Simulation and Analysis for Productivity and Ergonomics**

*Steve Hunter, Mississippi State University*

**CHALLENGER**  
**PROPULSION**

*Session Chair: Robert Frederick, University of Alabama in Huntsville*

**THU, 10:00 > Scientific Spacecraft Family: Generalized Design Approach for Future Scientific Spacecraft**

*Natalie Walker, Michael Benfield, The University of Alabama in Huntsville*

**THU, 10:30 > Analysis of Turbopump Applications in Spacecraft Propulsion Systems**

*Marty Calvert, Michael P.J. Benfield, The University of Alabama in Huntsville*

**THU, 11:00 > Using Modeling to Evaluate Proposed Technology Improvements to Spacecraft Chemical Propulsion Systems**

*Michael Benfield, The University of Alabama in Huntsville*

**THU, 11:30 > Numerical and Application Enhancements to an Interior Ballistic Modeling and Design Analysis Computer Program**

*Brian McDonald, The University of Alabama in Huntsville*

**SALON A, B, C**  
**MISSION PLANNING**

*Session Chair: Lee Stine, DESE Research, Inc*

**WED, 10:30 > Assessment of Opportunities for Enhancement in NASA SE&I with M&S**

*Wes Colley, Center for Modeling, Simulation and Analysis*

*Paul Compton, University of Alabama in Huntsville*

**WED, 11:00 > A Construction Library for Simulation**

*Douglas Haanpaa, Charles Cohen, Steve Rowe, Cybernet*

**WED, 11:30 > The Aerial Port Operations Planner (APOP)**

*Lee Stine, James Dworak, Richard Godbold, DESE Research, Inc*

**SALON A, B, C**  
**AVIATION, MISSILE & SPACE SIMULATION**

*Session Chair: Keith Jadus, U.S. Army Research, Development and Engineering Center*

**WED, 1:30 > The Defense Modeling and Simulation Office (DMSO)**

*Kenn Atkinson, Defense Modeling and Simulation Office (DMSO)*

**WED, 2:00 > Modeling of a Integrated Laser Induced Gas Detonation Plasma Thruster for in Space Propulsion**

*Roosevelt Wright, The University of Alabama in Huntsville*

**WED, 2:30 > Modeling of a ISRU LOX/CH4 Engine and Alternative Propulsion Systems for Mars Exploration**

*Roosevelt Wright, The University of Alabama in Huntsville*

**WED, 3:00 > Space ISR in OneSAF**

*Kevin Crumlish, SMDC*

*Sam McNully, ALATEC, Inc*

**WED, 3:30 > Designing for Analysis: Using IDEEAS to Study Target Location Effects**

*Daniel Flagg, Melinda Johnson, James Robison, SAIC*

**WED, 4:00 > Large Scale Sensor Network Simulations**

*Hong Lin, Sara Graves, Rushing John, Evans Criswell, Steve Tanner, The University of Alabama in Huntsville*

**WED, 4:30 > Conspace Space Simulation Application - CSSA**

*Petrica-Sandel Baciu, Tarek Zayed, Amin Hammad, Concordia University*

**SALON A, B, C**  
**AVIATION, MISSILE & SPACE SIMULATION**  
*Session Chair: Keith Jadus, U.S. Army Research, Development and Engineering Center*

**THU, 8:30 > Some Tactics, Techniques and Procedures for Simulating and Analyzing Net-centric Warfare Concepts - Representing Airspace Management**

*John Hughes, Monte Porter, CSC*  
*Tim McKelvy, AMRDEC*

**THU, 9:00 > CSF and XML – A Case Study in Applying XML Technology in Modeling and Simulation**  
*Brett Gossage and David Harbison*

**THU, 9:30 > What is a Simulation Architecture?**

*Louisa Guise, Tom McCarthy, Tim Campbell, Patrick Moseley, Raytheon Missile Systems*

**THU, 10:00 > Break**

**THU, 10:30 > Usage of Contractor Delivered End-to-End High Fidelity All-Digital Simulations in the Source Selection Acquisition Process**

*Jeremy Farris, George Wiggs, RDECOM*

**THU, 11:00 > The Development of an End-to-End High Fidelity All-Digital Simulation for UAV Weaponization**

*Jeremy Farris, George Wiggs, Stephen Mallette, Mike Cole, Sam Curtis, Brooke Grantham, RDECOM*

**THU, 11:30 > Radar Scene Generation with the AMRDEC Common Scene Generator**

*Bridget Sanders, Annie Saylor, Simulation Technologies, Inc.*  
*Blake Haynes, David Harbison, U.S. Army RDECOM AMRDEC*

**DISCOVERY**  
**SIMULATION METHODOLOGY, THEORY AND PHILOSOPHY**  
*Session Chair: Paul Page, U.S. Army Space and Missile Defense Command*

**WED, 10:30 > A Characterization Taxonomy for Integrated Management of Modeling and Simulation Tools**

*Bobby Hartway, Danny Thomas, The Aegis Technologies Group*  
*Joe Hale, NASA Marshall Space Flight Center*

**WED, 11:00 > Leadership and Management in Modeling and Simulation**

*Cynthia Aghamianz, Raytheon Integrated Defense Systems*

**WED, 11:30 > Exploitation of Object-Oriented Features to Streamline Simulation in an Open-Source Tool**

*Ray Sells, DESE Research, Inc.*  
*George Sanders, Jeffrey Hester, AMRDEC*

**DISCOVERY**

**SIMULATION METHODOLOGY, THEORY AND PHILOSOPHY**

*Session Chair: Paul Page, U.S. Army Space and Missile Defense Command*

**WED, 1:30 > Military Utility of High Resolution Terrain Information (HRTI)**

*Robert Williams, Paul Fall, SMDC*

**WED, 2:00 > Applying Selective-Fidelity Simulation to Terrain Representations in OneTESS**

*Bradley Schricker, AT&T Government Solutions, Inc.*

**WED, 2:30 > Army Equities in Space – Space Control (AEIS-SC)**

*Chad Daly, SMDC*

*Mike Tomlinson, SAIC*

**WED, 3:00>-Break**

**WED, 3:30 > Examination of Apollo Guidance Software Acquisition and Development - An Historical Perspective**

*Larry Grosberg, SMDC*

**WED, 4:00 > Adapting Statistical Design Methods for Conducting Missile 6DOF Simulation Experiments**

*Terril Hurst, Louisa Guise, Thomas McCarthy, Raytheon Missile Systems*

**DISCOVERY**

**RADAR SIMULATION**

*Session Chair: Robert Carruth, Trideum Corporation*

**THU, 8:30 > Conceptual On the Move Radar Analysis Using IDEEAS**

*David Whitten, Surasak Haugher Robert Vasse,, Mike Black Eyes, SAIC*

*John Rose, AMRDEC*

**THU, 9:00 > Marine Radar Study in Support of the Warfighter Protection Lab**

*Surasak Hauger, Melinda Johnson, John Montefusco, David Sander, SAIC*

*Dan Belk, Joe Moran, AMRDEC Warfighter Protection Lab*

*Jake Roth, University of Alabama in Huntsville*

**DISCOVERY**

**HOMELAND DEFENSE**

*Session Chair: Bradley C. Schricker, AT&T Government Solutions, Inc.*

**THU, 10:00 > IC2020: Embedded Simulation for Next Generation Incident Command Software**

*Dennis McGrath, Doug Hill, Amy Hunt, Dartmouth College*

**THU, 10:30 > Bomb Detonation in Crowd of Spectators**

*Frank Tatom, Engineering Analysis Inc.*

*Bart Justice, Axios Solutions Inc.*

**THU, 11:00 > Distributed Simulation In Multiagency Coordination Systems Training**

*Bob Devlin, Intergraph*

**ATLANTIS  
BIOMEDICAL SIMULATION**

*Session Chair: Roy P Koomullil, University of Alabama at Birmingham*

**WED, 10:30 > Hemodynamic of the In-Vivo Common Femoral Artery Bifurcation using Loosely-Coupled Fluid Structure Interaction Framework**

*Young-Ho Kim, Jong-Eun Kim, Yasushi Ito, Alan Shih, Andreas Anayiotos, University of Alabama at Birmingham*

**WED, 11:00 > Effect Of Salicylate On Electromechanical Properties Of A Model Biomembrane**

*Yuhua Song, University of Alabama at Birmingham  
Nathan Baker, Washington University in St. Louis*

**WED, 11:30 > An Interactive Framework for Medical Image Processing, Segmentation, Visualization and Geometry Extraction**

*Amitesh Kumar, Alan Shih, University of Alabama at Birmingham*

**ATLANTIS  
TRANSPORTATION**

*Session Chair: Virginia Sisiopiku, University of Alabama at Birmingham*

**WED, 1:30 > Assessment of Transit Operations In Birmingham Alabama**

*Virginia Sisiopiku, Abdul Muqueet Abro, University of Alabama at Birmingham*

**WED, 2:00 > Interaction of Traffic System Dynamics and Infrastructure Quality**

*Jane Lee, University of Illinois, Urbana-Champaign*

**WED, 2:30 > Internet Based Freight Transportation Model**

*Bernard Schroer, Heather Shar, Gregory Harris, University of Alabama in Huntsville  
Dietmar Moeller, University of Hamburg*

**ATLANTIS  
BATTLEFIELD SIMULATION**

*Session Chair: James Evans, EDO-CAS Incorporated*

**WED, 3:30 > Why Climb the Simulation Pyramid? Push Up Technical Reality, Point Down to Credibility**

*Ronald Saylor, AMRDEC*

**WED, 4:00 > The Application of Discrete-Event Simulation for Demining Strategy Evaluation**

*Hui-Chiao Jen, Rory Cannaday, Brian Huff, University of Texas at Arlington*

**WED, 4:30 > Directed Energy Interception of RAM Threats in an Operational Context**

*John Montefusco, SAIC*

**ATLANTIS**  
**SIGNAL/IMAGE PROCESSING**  
*Session Chair: Edwin Nunez, COLSA Corporation*

**THU, 8:30 > Simulation of Particle Swarm Optimization for Fast Motion Estimation**

*Jing Cai, University of Alabama in Huntsville*

*W. David Pan, University of Alabama in Huntsville*

**THU, 9:00 > Fast Global Motion Estimation using Partial Data**

*Hussein Alzoubi, University of Alabama in Huntsville*

*W. David Pan, iversity of Alabama in Huntsville*

**ATLANTIS**  
**SOFTWARE/HARDWARE-IN-THE-LOOP SIMULATION**  
*Session Chair: Ralph Weber, Computer Sciences Corporation*

**THU, 10:30 > Update of the Input/Output Software and Hardware Platform of the Geothermal Power Plant Simulator**

*Eric Zabre, Rogelio E. Martínez Edgardo J. Roldán-Villasana,, Instituto de Investigaciones Eléctricas*

*Heriberto Ávalos-Valenzuela, Comisión Federal de Electricidad*

**THU, 11:00 > Porting an Aerospace Hardware-in-Loop Simulation to RTLinuxPro**

*Richard Bond, FSMLabs, Inc.*

**THU, 11:30 > Direct Detection Scanning LADAR HWIL Testing System**

*Hajin Kim, U.S. Army AMRDEC*

**COLUMBIA**  
**MILITARY MODELING AND SIMULATION**  
*Session Chair: Gloria Flowers, U.S. Army Space and Missile Defense Command*

**WED, 11:00 > Human Factors Issues in Military Simulations**

*Steve Rowe, Joshua Band, Charles Cohen, Erik Hofer, Cybernet*

**WED, 11:30 > Low Demand Inventory Stocking Strategies for Army Aviation**

*Wes Colley, Center for Modeling, Simulation and Analysis*

**COLUMBIA**  
**SIMULATION IN EDUCATION**

*Session Chair: Claudette Owens, U.S. Army Space and Missile Defense Command*

**WED, 1:30 > Going Beyond Simple Answers at West Point: Promoting Higher Order Thinking with Monte Carlo Simulation**

*Ernest Wong, United States Military Academy*

**WED, 2:00 > Simulations as an Educational Environment for Balancing Disparate Needs**

*Ron Hay, Katherine Scott, Charles Cohen, Cybernet*

**WED, 2:30 > A Comparative Analysis of Modeling and Simulation Degree Programs**

*Mikel Petty, University of Alabama in Huntsville*

**WED, 3:00>-Break**

**WED, 3:30 > Affordable Flight Simulation in an Educational Environment**

*D. Brian Landrum, Jeff Cerny, Lance Warden, University of Alabama in Huntsville*

*Austin Meyer, Laminar Research*

*Ralph Bryson, USSRC Aviation Challenge*

**WED, 4:00 > Feasibility of a Guided Interceptor**

*Philip Hahn, Digital Fusion Solutions, Inc.*

*Robert Frederick, Nathan Slegers, University of Alabama in Huntsville*

**COLUMBIA**  
**TRAINING AND VIRTUAL ENVIRONMENTS**

*Session Chair: James J. Nutaro, Oak Ridge National Laboratory*

**THU, 8:30 > Multi-spectral Texturing with Smooth Blending**

*Chris Brooks, Sanjeeb Nanda, SDS International, Inc.*

*Carl Lickteig, Army Research Institute*

**THU, 9:00 > Integrating Training Theory and Technology to Train Terrain Visualization**

*Marcia Rossi, M. Javed Khan, Tuskegee University*

*Carl Lickteig, Army Research Institute*

**COLUMBIA**  
**INNOVATIVE SIMULATION SOLUTIONS**

*Session Chair: E L Perry, Northrop Grumman*

**THU, 10:30 > Incorporating Joint Immersive Learning Simulations Into Joint National Training**

*E L Perry, Northrop Grumman*

**THU, 11:00 > Simulation for FBI Training**

*Lyn McCall, WILL Interactive*

**THU, 11:30 > My Playbox is the World**

*E. L. Perry, Northrop Grumman*