

# 2006 SPRING SIMULATION MULTICONFERENCE OFFICIAL CALL FOR PAPERS

(FORMERLY THE ADVANCED SIMULATION TECHNOLOGY CONFERENCE, ASTC)

## BUSINESS AND INDUSTRY SYMPOSIUM

The Business and Industry Symposium is devoted to encourage international collaborative research, development, and innovation in numerical simulation and optimization as applied to Business and Industry. The goal is to stimulate the development and use of simulation technologies in specific areas of Computer Modeling and Simulation. This goal will promote the exchange of ideas and information between academia, government, and industry, thereby supporting the development of simulation and its applications to meet current scientific and technical challenges. Abstracts for original papers are solicited in the following (but not limited to) areas:

- Business Track
  - Economic Systems
  - Financial Systems
  - Management Systems
  - Marketing Systems
  - Operations Research
  - Intelligent Management Systems
  - Dynamic Business Process Optimization
  - Decision Analysis
- Industry Track
  - Manufacturing Plants and Systems
  - Environmental Sciences and Applications
  - Ground Water Technology
  - Nuclear and Chemical Waste Processing Technology
  - Process Flowchart Modeling
  - Power Plant Simulators
  - Material Sciences and Applications
  - Industrial Engineering
  - Systems Optimization
  - Neural Networks / Fuzzy Logic
  - Systems and Process Simulation
  - Transportation Systems
  - Automotive Simulation Applications
  - Human Factor Engineering
  - Knowledge and Data Systems
  - Complexity Theory
  - Statistical Modeling
  - Machine Learning
  - Robotics
  - Decision Support Systems
  - Mathematical Algorithms/Methodologies
  - Global Optimization
  - Genetic Programming
  - Parallel Computing
  - Simulation of Virtual Reality Systems

Abstract/Draft Paper Submission Deadline is October 7, 2005

Please submit abstracts/ papers for consideration to the SCS Manuscript Central <http://mc.manuscriptcentral.com/scs/proceedings/>. More information is available at <http://www.scs.org/springsim/>

General Chair: Maurice J. Ades  
Westinghouse Savannah River Company, USA  
maurice.ades@srs.gov

Program Chair: Thong Hang  
Savannah River National Laboratory, USA  
thong.hang@snrl.doe.gov

## 39TH ANNUAL SIMULATION SYMPOSIUM

The Annual Simulation Symposium is a forum for the exchange of ideas, techniques, and applications among practitioners of simulation in industry, government, and academia. This international Symposium is the oldest continuously operating conference/symposium dedicated to simulation. The paper sessions are designed to promote discussion of concepts, tools, methodologies, and results between authors and the audience. The structure of the Symposium also provides for a degree of collegiality and continuity in the discussions of the various topics presented during the week. Original contributions in all areas of modeling and simulation are welcome. This year's Symposium is particularly seeking papers in the following topical areas:

- Object-Oriented Simulation
- Simulation Languages, Tools, and Environments
- VLSI Circuit Simulators
- Simulation of Multiprocessor Architectures
- Simulation of Distributed Systems and Databases
- Simulation of Parallel Processing Systems
- Simulation based Performance Analysis
- Network Modeling and Simulation
- Simulation of Sensor Networks
- Simulation of Wireless and Mobile Networking and Computing
- Simulation of Large Scale Systems
- Simulation of Clusters and Grids
- Simulation of Client-Server Systems
- Simulation of Wireless Systems
- Pervasive Computing
- Smart Network Design and Traffic Modeling
- Routing and Mobility Management in Networks
- Wearable Computer Systems
- Mobile and Nomadic Computing
- Energy-aware Schemes for Wireless Networks
- Simulation of Real-time Systems
- Parallel and Distributed Simulation
- Simulation of Agent Systems
- Simulation-based Software Performance
- Reliability and Maintenance Models
- Simulation of Multimedia Applications and Systems
- Artificial Intelligence in Simulation
- Neural Network Models and Simulation
- Web-based Modeling and Simulation
- Animations/Virtual Reality
- Advances in Simulation Methodology and Practices
- Experimental Design
- Meta-modeling
- Statistical Analysis and Inference
- Verification and Validation
- Selection and comparison procedures

It is strongly recommended that papers be submitted to the Program Chair by electronic mail ( karatza@csd.auth.gr ). All submissions will be fully refereed for accuracy, technical content, and relevance. Papers should be NO longer than 25 double-spaced pages. Please include full name, affiliation, address, phone number, and email address of each author and designate the author who is to be contacted. Authors will receive the reviewers' comments and will be given a chance to respond to these reviews. Authors' replies will be taken into consideration in the final paper selection decision. Accepted papers will appear in the Symposium's Proceedings which will be published by the IEEE Computer Society. Authors of top papers will also be encouraged to submit a follow-up paper for publication in the SCS Journals. Only papers that have not been previously published or presented should be submitted. Authors must obtain employer, client, or government releases prior to submitting the final manuscript. For additional information, please contact or send mail to Prof. Helen Karatza (karatza@csd.auth.gr). Updated conference announcement and information are accessible at the symposium home page at: <http://agent.cs.d.auth.gr/~karatza/ANSS9>.

Paper Submission Deadline is  
October 15, 2005

General Chair  
Taleb Znati  
University of Pittsburgh  
znati@cs.pitt.edu

Program Chair  
Helen Karatza  
Aristotle University of Thessaloniki  
karatza@csd.auth.gr

## MILITARY MODELING AND SIMULATION SYMPOSIUM

The 2006 Military Modeling and Simulation Symposium will continue a series of annual spring symposiums devoted to the full breadth of simulation in the arenas of military modeling and simulation. This symposium, like the others in the Spring Simulation Multiconference, is a place for networking, discussions, and exchange of information with colleagues in your field and in other related fields. It also provides an international forum for acquiring unpublished public information on the latest technologies. For more information visit <http://www.scs.org/springsim/mms/>

- Homeland Defense
- Force Protection
- Consequence Management
- Counterforce Operations
- Intelligent Agents
- Human Performance Modeling
- Visualization & Virtual Reality
- C4I Simulation
- Embedded Training
- Avionics / Flight Control Simulation & Visualization
- Battle Field / Battle Theater Simulation
- DIS/DIS++/SISO
- High-Level Architecture (HLA)
- Ballistics & Propellant Simulation
- Impact and Penetration Modeling
- Computational Fluid Dynamics (CFD)
- Molecular Dynamics Modeling
- Structural Mechanics Modeling
- Solid Mechanics Modeling
- Flight Simulation & Methodologies
- Lethality, Vulnerability & Survivability
- Mission Planning & Rehearsal
- Simulation & Control of Spacecraft
- Intelligent Systems Simulation
- Computer Generated Forces
- Synthetic Natural Environment
- Agent-Based Combat Modeling
- Information Warfare Modeling
- Simulation Based Acquisition
- Grand Challenge Problems

### Key Dates:

Full Paper Submission:  
November 2nd, 2005

Notification:  
December 2nd, 2005

Final Paper:  
January 20th, 2006

General Chair  
John M. D. Hill  
US Military Academy  
john.hill@usma.army.mil

Program Chair  
Timothy Nix  
U.S. Army  
timothy.nix@us.army.mil

## AGENT-DIRECTED SIMULATION

The purpose of this symposium is to facilitate dissemination of the most recent advancements in the theory, methodology, application, and toolkits of agent-directed simulation. Developments in theory and methodology are expected to boost opportunities for previously unforeseen application domains. As the envelope of theory, methodology and infrastructures increases, so does the perimeter of ambitious agent-based projects. To this end, this symposium is devoted to emergent agent theories, methodologies, and environments that can facilitate analysis, design, and implementation of agent-directed simulations for various application areas such as military, business, engineering, human and social dynamics, ecosystems etc. Abstracts for technical and position papers are solicited. Topics include, but are not limited to the following areas:

- Theory:**
  - Agent-based computational organization theory
  - Agent-based simulation of anticipatory systems
  - Agent simulation architectures
  - Cooperative autonomy and coalitions
  - Deliberative, integrative, and social agents
  - Formal models of agents and agent societies
  - Holonic agent systems
  - Models of competition, cooperation, and negotiation
- Methodology:**
  - Agent-based simulation software engineering
  - Agents in support of simulation methodologies
  - Computational autonomy
  - Control of agent-based systems
  - Design and validation of agent simulations
  - Emergent law discovery in agent simulations
  - Human behavior modeling and simulation
  - Simulation of behavioral self-organization
- Applications:**
  - Business, commerce, transportation
  - Computational biology
  - Computational economics
  - Finance, and politics
  - Ecosystems, environment, and urban planning
  - Engineering and manufacturing
  - Human social dynamics
  - Military simulation
- Tools, Toolkits, and Environments:**
  - Agent modeling tools and simulation engines
  - Agent simulation programming languages
  - Agent simulation verification, validation, testing tools
  - CASE tools for agent-based simulations
  - Distributed simulation for multi-agent systems
  - Standard APIs for agent simulation programming

Prospective authors are invited to submit position or technical papers describing their work and achievements to ADS'06. Please see <http://www.eng.auburn.edu/SCS-TM/ADS-2006.htm> for author instructions

General Chair, Dr. Tuncer Ören, Ottawa University  
oren@site.uottawa.ca  
Program Co-Chair, Gregory Mady, University of Notre Dame  
gmady@nd.edu  
Program Co-Chair, Levent Yilmaz, Auburn University  
yilmaz@eng.auburn.edu

Manuscript Submission Deadline is October 31, 2005

## INTERNATIONAL CONFERENCE ON SIMULATION IN EDUCATION

ICSIE05 provides a forum for discussion and presentations focusing on the development of a curricular body of knowledge, accreditation criteria for simulation education, and the use of simulation tools in education and training. This year we will offer a session dedicated to the development of the body of knowledge in modeling and simulation for undergraduate and graduate education. We will propose models for undergraduate modeling and simulation education, propose an accreditation approach and criteria, examine certification within the university model, and explore the differences in US and European simulation education structures and needs.

- Topics include but are not limited to:
  - Teaching modeling and simulation
  - Educational case studies
  - Design and use of simulators for educational purposes
  - Modeling and simulation curriculum
  - Computer and web based education and training
  - Innovative uses of modeling and simulation
  - Development of multimedia models and their application in education
  - New educational paradigms
  - Virtual reality and potential applications of VR in education
- Modeling and simulation for education
- Use of simulations for educational purposes
- Simulation languages, packages, and simulation-based curricula
- Computer-based and simulation-integrated laboratories
- New software and hardware developments and their impact
- Experiences in integrating computers and software tools in education
- Government and corporate programs in support of computer- and multimedia-based education

Program Chair: Chell Roberts, Arizona State University, USA  
Tel: (602) 965-2567, chell.roberts@asu.edu

General Chair: Hamid Vakilzadian,  
University of Nebraska-Lincoln, hvakilzadian@unl.edu

Important Dates:  
Abstract submission due (all participants): August 29, 2005  
Feedback on appropriateness of the abstract:  
September 12, 2005  
Submission deadline (full papers): October 1, 2005  
Author notification (all participants): October 25, 2005  
Camera-ready Copy: November 1, 2005

For details on topical areas, submission requirements, deadlines, and up-to-date information, please consult the URL: <http://lunestone.it.uu.se/~arnoldp/ICSIE/>

## 9TH COMMUNICATIONS AND NETWORKING SIMULATION SYMPOSIUM (CNS 2006)

Formerly called Applied Telecommunication Symposium (ATS)

Communications and networking embody the heart and the nerve system of the information technology - a technology that is profoundly affecting our daily lives. Experts, researchers, managers, and entrepreneurs in this dynamic field often encounter challenges which lead to innovative basic and applied research and developments. CNS 2006 invites you to submit your original work to a forum where experts from industry and academia meet and exchange ideas on the topics. This international forum provides a bridge between the communications industry and academic research laboratories. We welcome papers describing design principles as well as applications pertinent to communications and networks with special emphasis on modeling and simulation. CNS 2006 is soliciting papers in the following (but not limited to) area of interests for peer review and presentation in the conference:

- Network Security and Management
- Network Design and Performance Analysis
- Wireless Communications and Mobile Networks
- Traffic Engineering and Measurements
- Clusters and Grid Computing & Communications
- Distributed Simulation and Real Time Systems
- Application of High Level Architecture for Networking Industry
- Network Centric Defense Application
- Network Centric Virtual Environments
- Virtual Environments for Training
- Web-Based Simulation and Applications
- Peer-to-Peer Communications and Computations
- Dynamic Data Driven and Sensor Networks
- Data Communications and Protocols
- Ad Hoc Networks and Applications
- Large Scale Networks
- Load Balancing and Congestion Control
- Simulation Tools for Communications and Networks
- Internet and Mobile QoS Architectures
- Modeling Techniques, Verification and Validation

Draft Paper or Extended Abstract Submission Deadline is November 15, 2005

Full paper/Extended Abstract due - November 15, 2005  
Notification of acceptance sent - December 15, 2005  
Camera-ready paper due - January 31, 2006

Draft papers or extended abstracts should be submitted to the SCS Manuscript Central <http://mc.manuscriptcentral.com/scs/proceedings> by November 15, 2005. All papers must include the author(s) e-mail address(es) and affiliation(s). The extended Abstract should have a minimum of two (2) pages. Please do not hesitate to contact the Chairs with any questions concerning the paper submission and review process, or questions regarding the relevance of a paper to the conference. Further information is available at <http://www.scs.org> and <http://www.scs.org/springsim>

General Chair: Hassan Rajaei  
Bowling Green State University  
rajaei@cs.bgsu.edu

Co-Chair: Bohdan Bodnar  
Motorola, Inc  
bbodnar1@motorola.com

Program Chair: Aftab Ahmad  
Norfolk State University  
ahmad@nsu.edu

## HIGH PERFORMANCE COMPUTING SYMPOSIUM

Grand Challenges in Computer Simulation

The 2006 Spring Simulation Multiconference (formerly Advanced Simulation Technologies Conference) will feature High Performance Computing Symposium (HPC) 2006, the 14th special symposium devoted to the impact of high performance computing and communications on computer simulations. Advances in networking, high-end computers, large data stores, and middleware capabilities are ushering in a new era of high-performance parallel and distributed simulations. However, along with these opportunities come new challenges. The goal of the 2006 High Performance Computing Symposium (HPC 2006) is to encourage innovation in high performance computing and communication technologies and to stimulate the use of these technologies in key areas of computer simulation. It will promote the exchange of ideas and information between universities, industry, and national laboratories through the development of high performance computing and communication applications that, in turn, can provide solutions to current scientific and technical challenges. Broad areas of interest include:

- High Performance Applications
- High Performance Software Tools
- Distributed and Grid Computing
- Visualization and Data Management
- Problem Solving Environments
- Parallel Algorithms and Architectures
- High Performance Discrete Event Simulation

Prospective authors are invited to submit full papers (up to 6 pages, double column) on topics related to the areas listed above. Submissions will be evaluated on relevance, technical quality, and exposition. Papers must not have appeared before (or be pending) in a journal or conference with published proceedings, nor may they be under review or submitted to another forum during the HPC 2006 review process. All accepted papers will be published in the proceedings as regular papers. Papers should be submitted electronically (in Word, PDF, or PostScript format) via the HPC 2006 conference web site at <http://www.caip.rutgers.edu/hpc2006/> and should use SCS format. Formatting instructions are available at <http://www.scs.org/conference/formattingkit.pdf>. It is expected that accepted papers will be presented at the symposium by one of the authors.

Program Chair: Tomasz Haupt  
Mississippi State University  
haupt@erc.msstate.edu

Full Paper Submission Deadline is  
October 14, 2005

General Chair: Layne Watson  
Virginia Polytechnic Institute and State University  
ltw@omaha.cs.vt.edu

More information can be found at  
<http://www.caip.rutgers.edu/hpc2006/>

## DESIGN, ANALYSIS, AND SIMULATION OF DISTRIBUTED SYSTEMS

Design, Analysis, and Simulation of Distributed Systems is devoted to all kinds of distributed and Internet-based systems. The main topics include, but are not limited to:

- Performance Evaluation
- Petri Net modelling
- Self-Organization and Adaption
- Cooperative Simulation Systems
- Distributed Simulation of Intelligent Systems
- Applications

The goal of the conference is to encourage innovation in design, analysis, and simulation of distributed systems. This includes new technologies as well as new methodologies, new concepts, and experience reports. DASD 2006 will promote a high-quality exchange of ideas and information between universities, industry, and national laboratories supporting the development in the design, analysis, and simulation area of next-generation distributed systems that can provide solutions to current scientific and technological challenges.

All prospective authors are invited to submit full papers of up to 10 pages (single spaced, 12pt) describing their (previously unpublished) work and achievements to DASD 2006. All submitted papers will be subject to a peer- reviewing process by three program committee members. Please submit papers in Word, PDF, or PostScript with the authors' complete addresses, phone, fax, and e-mail for consideration. Papers should be submitted electronically to <http://mc.manuscriptcentral.com/smc/>. More information about DASD 2006 and the Society for Modeling and Simulation can be found on the conference web page at: <http://www.tso.informatik.uni-rostock.de/DASD>

Full Paper Submission Deadline is October 31, 2005

General Chair  
Peter Kropf  
University of Neuchatel  
peter.kropf@unine.ch

Program Co-Chair  
Dietmar Tutsch  
Technical University of Berlin  
dietmart@cs.tu-berlin.de

Program Co-Chair  
Herwig Unger  
University of Rostock  
hunger@informatik.uni-rostock.de

## DEVS INTEGRATIVE M&S SYMPOSIUM

The increasing complexity of system design and analysis demands for more advanced modeling and simulation technologies. Towards this goal, Discrete Event System Specification (DEVS) has made significant advances in theory, methodology, and applications of system modeling and simulation. The goal of this annual DEVS Integrative M&S Symposium is to foster continuous research and to promote broader practice of DEVS-based modeling and simulation. This year's DEVS Symposium will continue to provide a forum for scientists and professionals to discuss recent developments in DEVS-based modeling and simulation as well as DEVS education and standardization. It also provides an opportunity to network with M&S organizations such as SISO, the DEVS-Standards Group, and M&SNet, and to exchange ideas with other M&S practitioners who participate in related SpringSim symposia. In order to promote wider discussions of DEVS-related advances in research and industry applications, joint sessions with Agent Directed Simulation (ADS) and High Performance Computing (HPC) symposia are planned. Topic areas include (but are not limited to)

- Practices and Applications
  - Manufacturing systems
  - Military systems and infrastructures
  - Software-intensive/networked systems
  - Transportation and traffic systems
  - Robotic and multi-robot systems
  - Agent modeling and simulation
  - Real-time and embedded systems
  - Ecological and environment systems
- Theory and Methodology
  - DEVS modeling methodology
  - DEVS-Integration of formalisms
  - Hybrid system modeling & simulation
  - Model continuity in system development
  - High performance simulation
  - Parallel & distributed modeling & simulation
  - DEVS Education
  - Issues in DEVS Standardization

Abstracts and full papers should be submitted to the <http://scs.proceedingscentral.com/> with the DEVS Integrative M&S Symposium clearly marked. In addition to regular papers (to be about 8 pages in length, single spaced, with minimum 10 pt font), the program committee will also accept position papers (up to 3 pages) or proposals for tutorials. Please submit papers in Word, PDF, or PostScript with the authors' complete addresses, phone, fax, and email. Selected papers from this symposium will be considered for a special issue of the SCS journal SIMULATION: Transactions of the Society for Modeling and Simulation International. For more information, visit: <http://www.cs.gsu.edu/DEVS/>

Manuscript Submission  
Deadline is October 31, 2005

General Chair  
Bernard Zeigler  
University of Arizona  
zeigler@ece.arizona.edu

Program Co-Chair  
Xiaolin Hu  
Georgia State University  
xiaolin@cs.gsu.edu

## SYMPOSIUM ON SIMULATION SOFTWARE SECURITY

General Chair: Rayford B. Vaughn, Jr., Mississippi State University

This symposium provides a forum for papers that address the use of modeling and simulation (M&S) in the area of information assurance or computer security as well as papers that address the means and methods needed to provide security features and assurance for the simulation code itself. Papers that involve the use of visualization techniques in modeling security in systems are encouraged. This is a new symposium for 2006. Topics of interest include (but are not limited to) the following:

- Modeling or simulating vulnerabilities in systems
- Use of M&S in computer security training
- M&S used in secure software development
- The need for trusted software development in M&S applications
- Sensitivity of and protection needed in simulation codes and models
- Scientific Visualization techniques applied to computer security
- Use of M&S in security engineering
- Use of M&S in teaching security engineering
- Use of M&S in analysis of/planning for intrusions and attacks
- Models of secure behavior (OS models, policy models, access control models)

**IMPORTANT DATES:**  
Submit abstract to determine appropriateness of topic by **October 1, 2005**

Full papers due **November 15, 2005**

Author notification of acceptance **December 15, 2005**

Camera ready copy due **Jan 11, 2006**

Abstracts and papers should be submitted to the General Chair

Rayford Vaughn  
Mississippi State University  
vaughn@cse.msstate.edu

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