ANNOUNCEMENTS & EVENTS

International Simulation Multi-conference (ISMc’10)
July 13 - 16, 2010  •  Ottawa, ON, Canada

2010 ODU Game Development Summer Camp
July 26 - 30, 2010  •  VMASC - Suffolk, VA

Standards in M&S Workshop - “Governance Process”
August 4 - 6, 2010  •  VMASC - Suffolk, VA

2010 ODU Game Development Summer Camp
August 9 - 13, 2010  •  VMASC - Suffolk, VA

ODU VMASC researchers attend prominent M&S conferences

Old Dominion University and VMASC researchers served on panels during the Southeastern Virginia Biomedical Technology Partnership Forum in June. The June 15 event at the Thomas Jefferson National Accelerator Facility in Newport News featured panels on treatment technology, diagnostic technology, and biomedical modeling and simulation.

The modeling and simulation panel featured two ODU VMASC faculty members. John Sokolowski discussed health care applications of modeling and simulation, and Mark Scebo, professor of psychology, spoke about medical modeling and simulation tools such as the fetal heart rate monitor and Cave Automatic Virtual Environment (CAVE).

The forum attracted participants from federal agencies such as NASA and the Jefferson Lab, and academic institutions including ODU, Hampton University and Eastern Virginia Medical School with a goal to share information about biomedical technology and treatment, and demonstrate what related resources are available in southeastern Virginia.

Conference proceedings have also recently been published for the 2010 International Conference on Social Computing, Behavioral Modeling, & Prediction (SBP10) held on March 30th at the National Institutes of Health (NIH) main campus in Bethesda, MD where VMASC research associate professors Joshia Behr and Rafael Diaz presented “A System Dynamics Approach to Modeling the Sensitivity of Inappropriate Emergency Department Utilization”.

The multidisciplinary SBP10 conference proved to be an excellent forum for behavioral and social science researchers to network with computational and computer scientists, attracting researchers, practitioners, federal agencies program staff members, and graduate students from across many disciplines.

VMASC Executive Director John Sokolowski was also a keynote speaker at MOOSIM World Canada 2010 on June 14th. MOOSIM World Canada, held in Montreal, Quebec, is an international conference devoted to Modeling, Simulation and eLearning. For 2010, the conference & expo featured tracks dedicated to Defense and Homeland Security, Aeronautics, Engineering, and Transportation, Government, Research, Education and Environment, as well as Health, Medical, and Biotech, with cross-cutting sessions focusing on the impact of emerging technologies such as serious games, virtual worlds, and distributed learning on ROI, productivity and collaboration. Dr. Sokolowski’s presentation was entitled “Modeling & Simulation: A Discipline, A Technology, An Opportunity”.

ODU and VMASC faculty members presented an Internet-based and interactive application of serious gaming, called VisPort (Visualization of Port Logistics), which they created at the Capitol Hill Modeling and Simulation Exhibition on June 30. The overall objective of the application seeks to advertise and describe careers in cargo ports through simulation, video interviews; and port information. In particular, the simulation demonstrates the basic functionality of a port, while highlighting specific tasks, such as Container Operator, Straddle Carrier Driver, and Stacker Driver. It also demonstrates the practicability of deploying interactive simulation applications for training and education purposes via the internet.

Petros Katsioloudis, ODU assistant professor of STEM education and professional studies, is the principal investigator for the project, “Visualization of Port Logistics: VisPort; Phase II: Evaluation and dissemination.” ODU/Department of STEM Education and Professional Studies and Virginia Modeling, Analysis and Simulation Center (VMASC) were awarded a grant of $122,000 from Opportunity Inc. and the Southeastern Virginia Partnership for Regional Transformation to develop, test and disseminate the application. Co-PIS on the research team are: Ginger Watson, associate professor of STEM education and professional studies with a joint appointment at VMASC; Yiannis Papelis, VMASC research associate professor; Philip Reed, associate professor of STEM education and professional studies; and Sara Russell, instructor of MIS/decision sciences.

Sponsored by the National Training and Simulation Association, with the support of Virginia Rep. Randy Forbes and the Modeling and Simulation Caucus, the Capitol Hill Modeling and Simulation Exhibition seeks out modeling and simulation demonstrations that support non-military and military functions, such as homeland security, emergency planning, medical simulation, sports and exercise, educational gaming and transportation.

Ours is an era of unprecedented technological capability that will benefit from M&S, but it won’t happen overnight. However, we must begin moving in this direction to maintain our position as a global leader in this area and at otherwise that M&S affords in modeling and simulation technology, research and development, and all application domains.

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As to what we do do, I offer these four elements for consideration.

1. Establish M&S as a legitimate and recognized industry in the United States. This effort includes garnering renewed support for its own NAICS code so that the scope of M&S activity in the country can be measured and tracked.

2. Recognize modeling and simulation as an academic discipline with its own body of knowledge. This will provide students with the assurance that they can pursue M&S as a profession and as a career. It will also help develop a cadre of professionals that are formally trained in the core aspects of M&S, which will produce better M&S technology and solutions in the long term.

3. Develop a formal M&S research agenda for the nation. This ensures addressing critical M&S technological issues that will benefit both the core growth of M&S and add to the enhancement of modeling and simulation’s ability to address over-increasing complex problems.

4. Establish an office in the executive branch of the government to oversee and coordinate this national strategy. This office will ensure a continuing coordinated effort among several agencies at the national level such as the National Science Foundation, the National Institutes of Health (NIH) and the Department of Defense, as well as other agencies at the state, regional, and local levels. This office will ensure that M&S is recognized as a legitimate and recognized industry in the United States, and as a national critical technology. It is clear that M&S has a role to play in our Nation’s security, its economy, and our position as a global leader. If we don’t put forth a comprehensive national strategy now, we will certainly be threatened and surpassed by those countries using M&S to strengthen their global position.

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Some high school students spend their afternoons playing in simulated environments through their video games. Four students at the Pruden Center have high school courses, however, their afternoons developing their own simulated environments — whether for modeling a weapon to see its potential effects or a building complete with textures and measurements.

A doctor walks into an operating room. Nurses surround a body lying on the operating table. The patient is undergoing a complicated heart surgery. The doctor slips on the floor and falls. Halfway through the procedure, a complication occurs and the doctor - not knowing how to react - loses his patient.

Thanks to modeling and simulation, however, this was simply a training program used to help create a real-life simulation. The patient was nothing more than an avatar, a simulated person. This scenario is the type of experience that plays itself out in “The Cave,” a 10 x 10 x 10 educational facility at ODU’s Dominion Tower. The facility is composed of four walls with projection screens that create a simulated environment - complete with people who give real-time responses.

The education courses for modeling and simulation in Suffolk at the Pruden Center and ODU - where The Cave is based - are designed to train professionals who will work in the industry. “Modeling and simulation has become a tool what ifs of their business,” said Dr. Steven Steinman from ODU's School of Engineering. “It's a powerful tool. If we can interact with software, you can interact with a simulation. You can see what something would look like before you do it.”

“Modeling and simulation is an engineering science, it is far from your father's engineering degree.” Myeles Napier is in his second year of Pruden’s modeling and simulation in simulation for ship designs. He is interested in pursuing a gaming design degree, and he said the gaming aspect of modeling and simulation is what piqued his curiosity. “Many people who come to our program are very good at math, but they also have very artistic,” Burns said. “Their understanding of the arts language helps them come up with fantastic models.”

“I can't explain it other than it was a gut reaction,” said Josh Burns, a student at Pruden. “I've always been interested in pursuing a gaming design degree, and he said the gaming aspect of modeling and simulation is what piqued his curiosity. "Many people who come to our program are very good at math, but they also have very artistic," Burns said. "Their understanding of the arts language helps them come up with fantastic models."

“Modeling and simulation uses the same skill sets recreational gaming uses, but for education purposes - such as building a flight simulator,” said Napier. "They're using training programs to create real-life situations," said modeling and simulation teacher Josh Burns. "If you put a building or something together wrong in the simulation, it'll fall apart. It's a way to train students and help them work on doing real-world simulations." said El Williams, who is interning at Mymic. "It's like putting military training on a computer. If there's someone hurt in the field we simulate them getting hurt and then the process of getting them what they need. "They did a great job in preparing us for our internship," said Myeles Napier, who is interning at Mymic. "Most of the hard work we're doing in the field, we got the basics for in the classroom."

Students at the center have expressed interest in continuing their education in modeling and simulation, and Mymic is maintaining its interest for an extended period of time. “I've loved it,” Napier said. “The internship aspect has been fun. It's what I really like to do. It's the only thing I've done in school that I haven't gotten bored with. I'm thankful I've had the chance to do it and know it's what I want to pursue.”

One insight was the use and abuse of terms within the general M&S community. For instance, the terms modeling and simulation are often used interchangeably when, in fact, they represent distinct concepts. Modeling is the representation of some real world system or process, whereas simulation is the implementation of that model. Though making the distinction helps clarify the emerging subject of M&S. An example of this use was given by one participant who pointed out that most interested in pursuing a degree in design and simulation with the standard M&S education or standard itself. By understanding the language of the subject, we might gain a better understanding of its future.

The workshop was a collection of presentations and working groups. The presentations covered a variety of topics from the theoretical foundations of M&S to NASA's recent application of M&S Standards. A theme from both the presentations and the working groups was that M&S and M&S Standards face a vital need in the next 10 years. For example, in Dr. Jeffrey Steinmann’s (Warp IV Technologies) presentation, he argued that due to technology and social changes, the current methodologies for doing M&S will rapidly become obsolete and thus their inability to effectively conduct business. To exemplify this, he said that multi-core processes were now the standard within the computing market but most current simulations run on the single core paradigm.

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