

Transportation



Homeland Security



Serious Gaming



Military



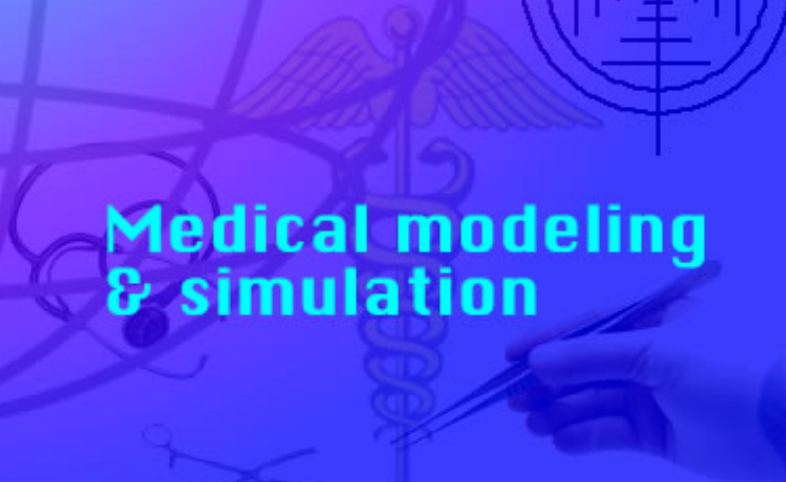
V M A S C



Education in modeling & simulation



Medical modeling & simulation



VMASC Overview

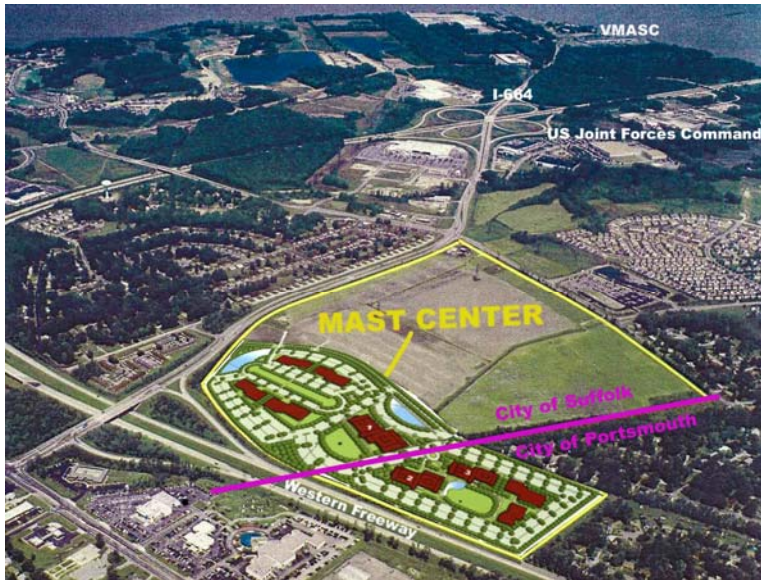


- ▼ Enterprise Center, Old Dominion University – Report to the VP of Research
- ▼ Home of Old Dominion University's Modeling & Simulation Graduate Programs
- ▼ Established July 1997 by Commonwealth of Virginia
- ▼ Locations in Suffolk (TCC-Portsmouth) and on ODU campus in Norfolk

- ▼ Faculty/Staff: ~55 research and support staff, plus ~50 students and ~12 faculty
- ▼ Multidisciplinary: activities include faculty and students from all six academic colleges at ODU and from other universities
- ▼ ~\$10.5M per year in funded research



MAST Research Park



- ▼ 3 Buildings (175K SF):
 - VMASC (60K SF)
 - ODU Tri-Cities Higher Ed. Center
 - Research/Technology Building

- ▼ Construction Well Underway
- ▼ Shifting to internal build out
- ▼ Move in Fall 2007
 - 8,000 SF Experimentation Lab
 - 3,000 SF Visualization Rsch Room
 - 2,500 SF of Meeting Space



MAST CENTER

Executive Director
Dr. Mike McGinnis



Executive Assistant
Cheryl Sparrer

VMASC Organization

Research & Development



Dr. John Sokolowski

VMASC Research Clusters

Social Sci.



Dr. Cathy Banks

Medical



Dr. Stacie Ringleb

Defense/HLS



Dr. Andreas Tolk

M&S Faculty

- Dr. Andreas Tolk: EMSE
- Dr. Patrick Hester: EMSE
- Dr. Yuzhong Shen: ECE
- Dr. Zia Rahman: ECE
- Dr. Jiang Li: ECE
- Dr. Kate Lyons: Biology
- Dr. Holly Gaff: Health Sci
- Dr. Julie Hao: ME
- Dr. Li Li: GIS
- Dr. P. Madhavan: Psychology
- Dr. Ginger Watson: Ed
- Dr. Tal Ezer: Oceanography
- Dr. Dean Chatfield: Business



Sheila Flanagan
Director of Financial & Administrative Support Services

Admin

- Sam Lindsey
- Corie Forrest
- Tracy Vann
- K. Thompson
- Dave Maltby
- Procurement
- Visual Media
- Travel/Budget
- Prog. Support
- ETS

IT

- Chris Poyner
- Richard Howell
- David Ralph
- Hector Garcia
- Network
- IT Support
- Lab Support
- VMASC East

Computational Sciences



Dr. Yiannis Papelis

Gaming



Dr. Lee Belfore

Enterprise Engineering



Dr. Rafael Diaz

Transportation



Mike Robinson

To be filled in AY2007:
Transportation
Engineering Management
Computer Science

Advisors & Fellows

Jack McGinn
Alion S&T
Chairman, Board of Advisors



Craig Langman
GD-IT
V/Chairman, Board of Advisors



LTC Anthony Abbot
Army War College Fellow



Project Scientist

- Bob Armstrong
- Chuck Turnitsa
- Peter Foytik
- Menion Croll
- Saikou Diallo
- Will Richards
- Hector Garcia

1



SDDC-TEA
Military Surface Deployment and Distribution Command Transportation Engineering Agency

2




NASA
National Aeronautics and Space Administration Langley Research Center

3




USAF
Air Combat Command

4



Jefferson Lab

5



TRADOC
Training and Doctrine Command

6



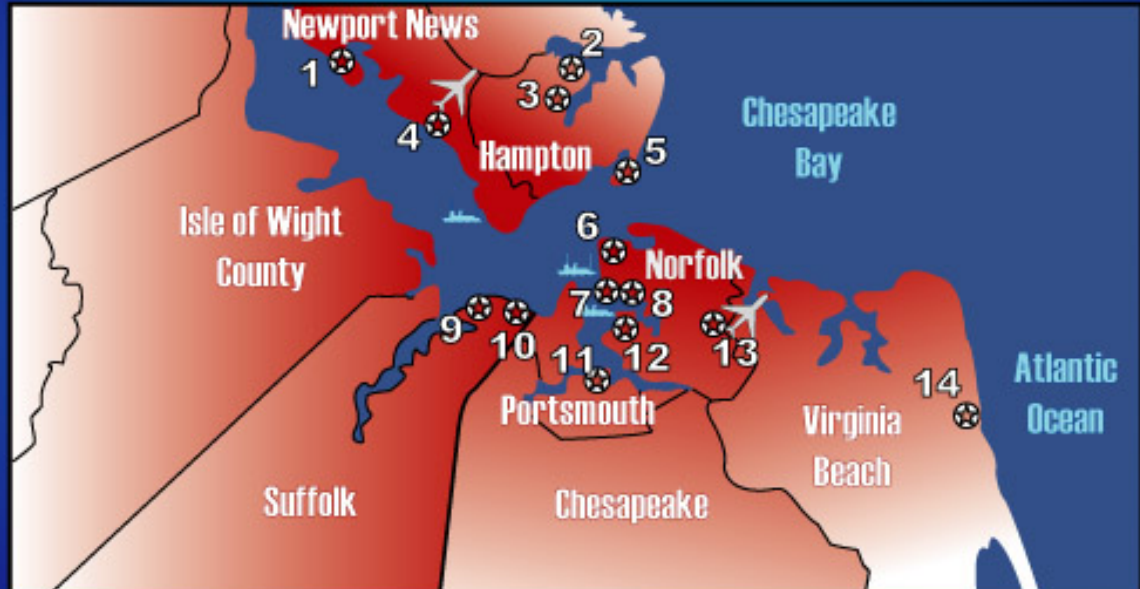
USJFCOM Norfolk
United States Joint Forces Command

14

FCTC
Fleet Combat Training Center Atlantic, Dam Neck

CDSA
Combat Direction Systems Activity

MS&V TECHNOLOGY CUSTOMERS IN HAMPTON ROADS VIRGINIA



7



Joint Forces Staff College

13



Maintenance & Logistics
U.S. Coast Guard

8



ACT
Allied Command Transformation

12



Old Dominion University

11



Atlantic Area Command
U.S. Coast Guard



VMASC
The discipline of M&S™

10



JWFC Suffolk
United States Joint Warfighting Center

9



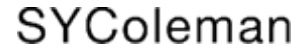
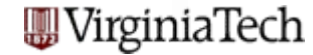
VMASC
Virginia Modeling, Analysis and Simulation Center

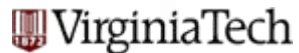
Virginia Academic Partners



Modeling & Simulation Centers







M&S Academic Programs



Program Characteristics

- ▼ Multi- and Interdisciplinary (supported by faculty from ten academic departments and across six colleges)
- ▼ A strong, common foundation core
- ▼ Flexibility to design a plan of study to meet each individual's objectives and needs
- ▼ Thesis and Dissertation topics of relevance to employers

ODU M&S Masters Programs

- ▼ ME/MS in M&S
- ▼ Approved in 1998
- ▼ Spring 2007 enrollment: 65 students
- ▼ 1 international student from Vietnam
- ▼ 51 graduates of December 2006
- ▼ Offered via distance learning (e.g., Naval Surface Warfare Centers, Dahlgren Division; NAVAIR Patuxent River)

ODU M&S Ph.D. Program

- ▼ Ph.D. in Engineering with a concentration in M&S
- ▼ Approved in 2000
- ▼ Spring 2007 enrollment: 55 students
- ▼ 9 international students from Vietnam, Ghana, India, China, Venezuela
- ▼ 3 graduates as of December 2006
- ▼ Core courses offered via distance learning

M&S Academic Programs



Program Characteristics

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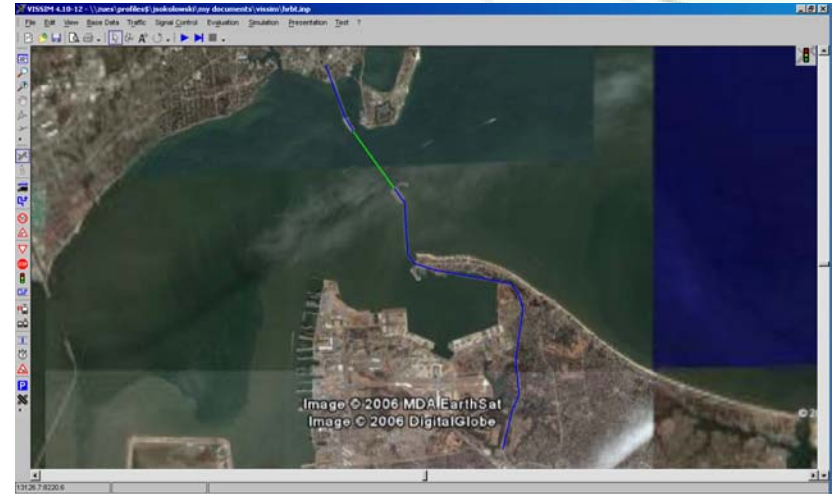
VMASC Research



VMASC R&D Projects

Public Transportation

Use modeling, simulation and visualization research methods to investigate optimizing public transportation in highly congested areas.



Crowd Modeling

- ▼ Sponsored by Defense Modeling & Simulation Office
- ▼ Can be integrated into simulations to enhance realism of training

VMASC R&D Projects

Medical Applications - Patient Specific Models - Ankle Joint

- ▼ Models will be developed to treat trauma and diseases effecting organs and joints such as the ankle joint on a patient specific basis



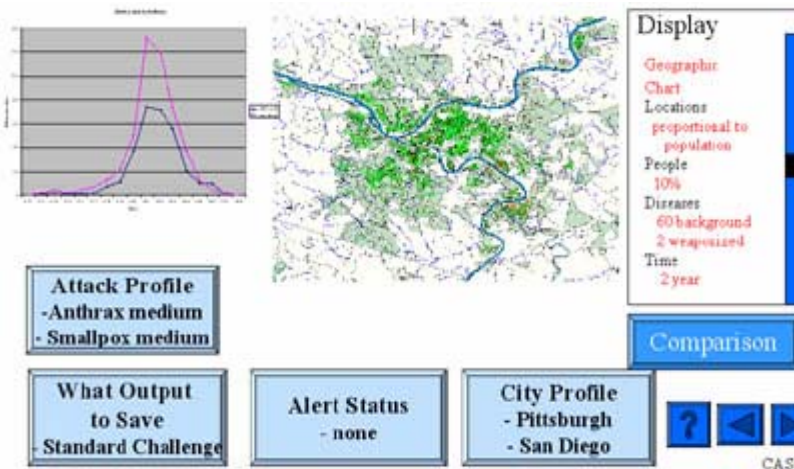
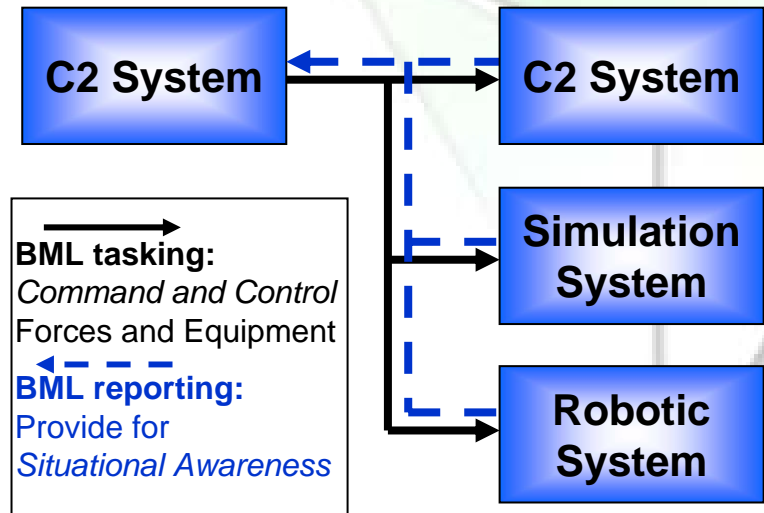
Medical - Virtual Operating Room

- ▼ Virtual Training Environment
- ▼ Joint project with EVMS
- ▼ Train medical personnel on procedures and as a team

VMASC R&D Projects

Coalition Battle Management Language

- ▼ Unambiguous language used to Command and control forces and equipment conducting military operations, and to provide for situational awareness and a shared, common operational picture.
- ▼ Principal Investigator: Dr. Andreas Tolk



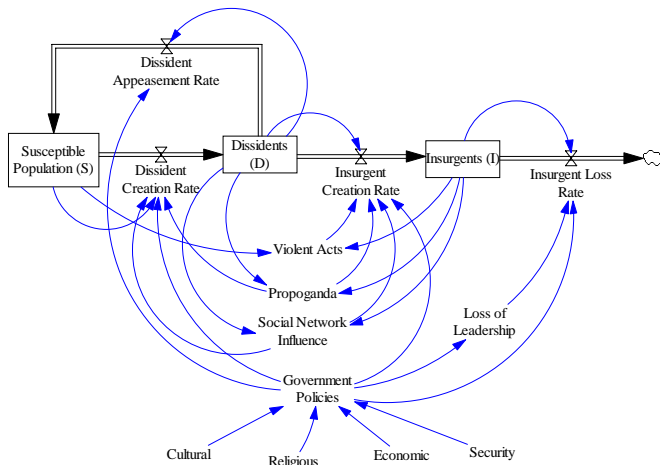
Mass Casualty Models

- ▼ Funded by DHS- jointly with Carnegie Mellon University
- ▼ Model effects of pandemics, natural & man-made disasters

VMASC R&D Projects

Critical Infrastructure Modeling

- ▼ Modeling critical infrastructure is important for disaster mitigation and recovery. Interactions among these infrastructures is important to meet these goals.



Social Networks Modeling

- ▼ Various factors affect the creation and destruction of insurgencies. Understanding how these factors influence one another is important for developing counterinsurgency strategies.

ETS/IPA Program

ETS

- ▼ Engineering and Technical Services (ETS) Contract with USJFCOM.
- ▼ 5 Year contract, base year with 4 option years.
- ▼ In Option Year 2.
- ▼ Serve in 7 Directorates.
- ▼ Provide Quality People for a “reasonable price” to USJFCOM .
- ▼ 20-25 Engineers/Military Background in Communications Systems, M&S, Program Management.
- ▼ The ETS program fills federal government positions requiring ‘honest brokers’

IPA

- ▼ Intergovernmental Personnel Act.
- ▼ Authorizes temporary, short term assignment of employees to Federal Agencies. 2 years/1 extension 2 yrs.
- ▼ Mutual concern and benefit to both organizations.
- ▼ Presently 9 IPAs
 - 7 USJFCOM Staff sections.
 - 2 at COMNAVOPTEVFOR
- ▼ Future at OSD/LAFB.
- ▼ Salary dictated by Federal Agency.
- ▼ Salary/Fringe/Administrative Fee.
- ▼ Must be ODURF Employee for 90 days on contract prior to IPA appointment.