

**“The Wide Area Virtual Environment (WAVE)**

**Monday, March 31, 2014 @ 3:30 – 4:45 PM**

**Computer Science Building, Room 210**

**Bowie State University, Bowie, MD**



**By: Dr. Alan Liu, Director of the Virtual Medical Environments Laboratory at the National Capital Area Medical Simulation Center (SimCen)**

**Abstract:**

The Wide Area Virtual Environment (WAVE) is a 1,000 sq. ft. immersive virtual environment designed for medical team training over an extended period of time. The WAVE blends 3D virtual reality, live patient actors, human patient simulators, and part task trainers to provide an unprecedented realism. The WAVE supports medical teams training continuously over a period of up to four days to simulate the rigors of military field medicine.

In 2012, construction of the 1,000 sq. ft. WAVE began. The WAVE is the world's largest immersive virtual reality training theater. The WAVE is the first integrated training facility to integrate all major medical simulation modalities on this scale. It can do this in a controlled physical environment that can be changed as necessary to meet training requirements. The WAVE is capable of providing training to more than 200 participants a day. It is also capable of running continuous (24hr) training scenarios for up to four days. It can support the training for large scale mass casualty events.

In my talk, I share the history, purpose, design, implementation, and operation of the WAVE. I will describe some of the challenges in generating 3D virtual environments on a massive scale. 3D modeling issues will be described. In particular, the challenges of developing 3D environments, animations, and lighting will be highlighted. Issues related to the integration of physical elements, such as air cannons, sound, smoke and scent generators will be presented.

Contact Dr. Sharad Sharma ([ssharma@bowiestate.edu](mailto:ssharma@bowiestate.edu)) if you have any question.