

Sunday, October 16 - Workshops

Using Agent-Based Simulation for Input Assessment of a Disaster Response

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Emergency response to a large-scale disaster is a costly and critical system. It is further complicated by the fact that it is nearly impossible to train or test responders and equipment with a full-size artificial disaster. Creating such scenarios, while useful for the participants is prohibitively expensive and the events are far too rare to test lots of new technologies and their effects. Therefore, the use of computer simulation seems appropriate for testing new equipment and training strategies. A simulation of disaster response gives insight into strategy effectiveness as well as gives validation for funding of new technologies. Emergency response has a regrettably finite budget. Thus, it is appropriate and necessary to allocate those funds to the projects which will provide the best outputs. Research of this sort is of obvious contemporary interest as our country weighs different strategies and options to equip and fund first responders.

The simulation developed here is principally concerned with the initial assessment and response phase of a large-scale earthquake in an urban environment. The actual earthquake is a recreation of the 1994 Northridge earthquake in Los Angeles, CA, as modeled by FEMA's loss estimation program, HAZUS. An agent-based model is used to simulate police and ambulance movements throughout the region. The main functions are assessing casualties and damage as well as responding to reported casualties and transporting them to nearby hospitals. While this simulation involves fewer operations than actually occur in a real earthquake of this magnitude, the results provide some insight into the effects of certain technologies and strategies. As George Box stated, "All models are wrong, but some are useful." The results can be used to show which technologies or inputs create the most beneficial outputs of the response system.

Incident Response to Terrorist Bombings

Lt. Mark Sisson, Christiansburg Police Department

During this four-hour block of instruction the attendees will be introduced to the following:

- Terrorist ideologies and the threat of energetic materials
- Recognition and identification of energetic materials
- Proper respond to bombing incidents

* Each attendee will receive a participant recourse guide with the PowerPoint lesson plan and important recourse information.

This training program is sponsored by the US Department of Homeland Security and the Office of Domestic Preparedness. Each attendee will receive a certificate of completion from the University of New Mexico Tech.

What Responders Need to Know About NIOSH Approved Respirators

National Institute for Occupational Safety & Health/National Personal Protective Technology Laboratory Staff (NIOSH/NPPTL)

NIOSH will conduct a workshop on respirator topics for emergency responders. The workshop will provide information on:

- Respirator approval standards
- CBRN respirator approval testing
- Respirator use and maintenance programs
- The NIOSH SCBA firefighter investigation program