

# Hazardous Epidemic

*New Georgia Tech training program helps public safety personnel protect themselves from methamphetamine labs.*

BY JOHN TOON

**A**n epidemic of small-scale methamphetamine labs is creating a new hazard for public safety personnel who may be injured by the flammable solvents, toxic acids and other hazardous materials used to produce the illicit drug in homes, apartments, hotel rooms — and even vehicles.

Contamination from these makeshift labs is also creating hazardous waste problems in rural communities that are often ill-prepared to deal with them. But perhaps the

most environmentally worrisome aspect of the labs is the hidden hazard they may create for the unsuspecting new occupants of homes, apartments and hotel rooms inadequately cleaned up after being used for methamphetamine production.

To help law enforcement personnel, emergency medical technicians, firefighters and others deal with the threat from these clandestine drug laboratories, the Georgia Tech Research Institute (GTRI) has developed a new training initiative that will teach these “first responders” how to recognize the labs and protect

themselves from the contents. The program, which includes training at a simulated methamphetamine lab, will also provide information about proper clean-up techniques.

“There is a lot of potential for harmful exposure for first-responders who may not be aware that they are going into a methamphetamine lab and may



**RIGHT:** The Georgia Tech Research Institute has developed a new training initiative to teach police, firefighters and emergency medical technicians how to recognize methamphetamine labs and protect themselves from the contents.

not know how to protect themselves from the hazardous materials there," says Ray Doyle, senior research scientist in GTRI's Electro-Optics, Environment and Materials Laboratory (EOEML). "An estimated 30 percent of fires departments are responding to are the result of methamphetamine labs. But firefighters may not know until they get in a building that there is a lab there."

Techniques for producing the highly addictive drug vary, but can include the use of such materials as lye (sodium hydroxide), red phosphorus, lithium metal, benzene, toluene, ether and ammonia. The danger is compounded when the materials are "cooked" over an open flame, creating both fire and explosion hazards.

In December 2004, four people — including two children — were killed in Texas when a methamphetamine lab exploded. Estimates suggest that as many as 100 public safety officers have been injured while seizing meth labs in the past several years.

"Meth labs use a wide range of chemicals that can expose not only the people producing the drug, but also others in the home — including children," notes Kevin Caravati, a GTRI senior research scientist. "A lot of these chemicals are toxic, and the hazardous waste they leave behind is often just poured out onto the ground or dumped on unsuspecting businesses."

Beyond the chemical hazards, the meth labs are sometimes booby-trapped to injure law enforcement personnel. "The dangers that first-responders face from methamphetamine labs can be much greater than those at environmental hazard sites associated with traditional industrial sources, but the formal training programs are just not available at the right level yet," Caravati adds. Once identified, cleaning up a meth lab can be done with established techniques using standard precautions — including protective clothing. "But the process of heating the chemicals tends to spread the contamination over a wide area beyond the immediate production facility," Doyle notes.

That contamination can leave a hidden hazard for unsuspecting residents of homes, apartments or hotel rooms that have been inadequately cleaned up. Methamphetamine is readily taken up by carpeting, draperies and other furnishings, so new tenants can be exposed to residual amounts of the drug through simple skin contact.

"Unless the home is properly decontaminated, the next family moving in will be contaminated," Doyle says. "Children can wind up with measurable levels of methamphetamine just from crawling on the floor."

PHOTO BY GARY MEEK



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Proper decontamination can be expensive — up to \$10,000 for a large home. "One of the most difficult issues for the future will be determining who will pay for the clean up," Caravati notes. "The people who have created the problem are usually in jail and don't have any assets left to pay for the work."

The new methamphetamine training initiative adds to GTRI's nationally recognized programs in hazardous waste identification and remediation.

"This is a natural fit for us because of our experience with hazardous materials and emergency response," notes Ken Johnson, interim EOEML director. "There is a huge public education effort that needs to be done, and thousands of people need training in this area. We want to help these first-responders know how to protect themselves and others."

Beyond the training, researchers are developing tools that will help first responders more quickly identify the drug. Long term, they hope to develop improved communications and decision-aid systems for public safety personnel, and study how methamphetamine exposure affects human health and the environment.

In 2003, more than 400 methamphetamine labs were shut down in Georgia, and that number is expected to grow as law enforcement agencies focus more attention on the problem, Doyle notes.

"Most people are probably unaware of how serious the meth issue is and the problems it poses for the public safety community," Caravati adds.

@ Read more at: [gtresearchnews.gatech.edu/reshor/rh-w05/meth.html](http://gtresearchnews.gatech.edu/reshor/rh-w05/meth.html)

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