

## Argonne Team Challenges Physical Security

Physical security—the art of protecting tangible assets—is the counterpart to cyber security. Physical security can take the form of locks, tamper-indicating seals, guards who stand watch at nuclear facilities, fingerprint scanners and metal detectors, and even cargo security systems that track trucks full of nuclear material. It is high-tech, low-tech, often ancient and usually overlooked. Physical security defenses aren't challenged very often, but when they are, the results can be catastrophic.

## The Challenge

Using research and development techniques, devise and demonstrate methods to defeat physical security, then develop countermeasures to improve it. These studies will assist in improving national security.

## The Solution

Argonne's Vulnerability Assessment Team (VAT) conducts multi-disciplinary research and development on physical security devices, systems and programs.

The VAT works extensively in the areas of product anticounterfeiting, tamper and intrusion detection, cargo security and nuclear safeguards, as well as the human factors associated with security using the tools of industrial and organizational psychology. The VAT also runs a rapid turnaround, one-stop microprocessor shop where Argonne scientists and researchers can order microprocessor solutions (hardware and software) for analog or digital measurements. The VAT hosts the *Journal of Physical Security*, the first scholarly, peer-reviewed journal devoted to physical security R&D.

## The Results

Argonne's VAT experts have revealed the dirty secrets behind electronic voting machines, "high-security" electronic locks, tamperindicating seals, iris and fingerprint scanners and even GPS navigation systems. Current work includes vulnerability assessments, developing better security devices, consulting and training, and designing specialty field tools for counter-terrorism, emergency response and intelligence applications.



Tampering with an electronic voting machine.

*"Real security is thinking like the bad guys,"* maintains Roger Johnston, head of Argonne's VAT.

