Detecting Hidden Nuclear Materials In Cargo

In the High Energy Physics Lab, senior Jennifer Helsby, junior Patrick Ford and May 2008 graduate David Peña have worked for two years on a project that is funded by the Domestic Nuclear Detection Office (DNDO). "They're a very talented bunch," said **Marcus Hohlmann**. "I give them guidance, but they take their own initiative, which is exactly what you expect from a researcher." The undergrads, with graduate students and a postdoc, have been investigating the use of subatomic particles for detecting hidden nuclear materials in cargo. The effort involves muon tomography. Muons are naturally produced by cosmic rays, arriving from deep space that constantly bombard the Earth's atmosphere. Dr. Hohlmann is applying a novel type of micro-pattern particle detector, a gas electron multiplier (GEM). The GEM was initially developed at CERN, the European Laboratory for Particle Physics near Geneva, Switzerland. The total funding now stands at $1,047,000 since the grant was renewed for year three.