Director's colloquium March 18 large hadron collider

March 10, 2010

LOS ALAMOS, New Mexico, March 10, 2010— In an unclassified Director's Colloquium on March 18, Lyndon Evans of CERN, the European Organization for Nuclear Research, will talk about the most complex scientific instrument ever built—the Large Hadron Collider (LHC).

The talk, entitled "The Large Hadron Collider Adventure," is at 1:10 p.m. in Los Alamos National Laboratory's Physics Building Auditorium. The colloquium is hosted by Rajan Gupta of Nuclear & Particle Physics, Astrophysics & Cosmology and is open to all badge holders. Non-badge holders can attend the event if they are escorted.

As viewers of the movie Angels & Demons might remember, LHC is the world's largest and highest-energy particle accelerator, lying in a tunnel 17 miles in circumference beneath the Franco-Swiss border near Geneva, Switzerland. The accelerator uses 6,000 superconducting magnets weighing almost 50,000 tons to collide opposing particle beams of protons or lead nuclei to probe new interactions and elementary

particles at the teraelectronvolt (TeV) scale, said Evans, who heads the 2,500-member LHC project. Its goal: to address some of the most fundamental questions of particle physics, which may lead to a better understanding of the origins of the universe.

“It is, without doubt, the most complex scientific instrument ever built,” Evans said. And with a nine-billion-dollar budget, it’s also the world’s most expensive science project. After more than 15 years of development and construction, the LHC, which was built by CERN in collaboration with thousands of scientists from more than 100 countries as well as hundreds of laboratories and universities, is ready to begin its physics program.

Evans will describe the unique design features of the LHC and highlight some of the challenges of bringing it all together, including lessons learned from an incident in September 2008 that caused operations to be halted for more than a year.

Evans is a Fellow of the American Physical Society, a Fellow of the University of Wales, and a Commander of the British Empire. In 2008, he won the Robert R. Wilson Prize for Achievement in the Physics of Particle Accelerators. He holds a doctorate in physics from the University of Wales.