

**ACS-Energy Technology Group Monthly Meeting**  
**Tuesday, October 18, 2016**  
**The Large Hadron Collider (LHC) - Exploring a New Energy Frontier**  
**Dr. Thomas Ferguson, Professor Emeritus, Department of Physics, Carnegie Mellon University**

The Large Hadron Collider (LHC) is a proton-proton colliding-beam accelerator, situated at the European accelerator center, CERN, outside Geneva, Switzerland. After the discovery of the long-sought Higgs boson in 2012, the center-of-mass energy of the LHC was increased from 8 to 13 TeV (trillion electron-volts) in 2016, thus opening up an entirely new energy regime for study. This talk will give a short introduction on the history of colliding-beam accelerators in general and the Standard Model of particle physics. After this introduction, the focus of his presentation will shift to the LHC itself, the Compact Muon Solenoid (CMS) experiment, in which Mr. Ferguson is involved, recent results, and possible discoveries on the horizon that could arise from the LHC.

Thomas Ferguson recently retired after 31 years as a professor of physics at Carnegie Mellon University. He received his Ph.D. in physics from UCLA in 1978, and was then a research scientist at Cornell University for 7 years, before joining the CMU faculty in 1985. He has worked on the electron-positron colliding beam accelerator SPEAR at the Stanford Accelerator Center (SLAC), CESR at Cornell University, and LEP at the European accelerator center (CERN). Since 1994, he has been a member of the CMS Collaboration, working at the Large Hadron Collider (LHC), a 13 TeV proton-proton colliding-beam accelerator situated at CERN. The CMS experiment started recording data in 2010. Mr. Ferguson was a co-discoverer of the Higgs boson in 2012 and continues today to search for new phenomena beyond the Standard Model of particle physics.

**The meeting location is Old Town Buffet, 860 Sawmill Run Rd. Pittsburgh PA. 15226**  
Just south of the south end of the Liberty Tunnel. [oldtownbuffetpgh.com](http://oldtownbuffetpgh.com)  
**Social Hour 5:30 pm, Dinner 6:30 pm, Talk 7:30 pm.**

**Please make a reservation by contacting Elliott Bergman at**  
[elliott.acstechnology@gmail.com](mailto:elliott.acstechnology@gmail.com) **by 5:00 P.M. on Oct. 14, 2016.**

This will help us set up an appropriate size meeting room.

**Walk-Ins are still welcome. Our meetings are open to all.**

Menu includes the All You Can Eat Buffet at a cost of \$20 per person. Wine can be ordered as an extra directly thru the Wait Staff.