Lessons Learned from Computing in High Energy Physics

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Seminar Series

Presented by…

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Abstract: The scale of the computing requirements and the distributed nature of the collaborations running high energy physics experiments led to the development of highly organized computing models. This resulted in large scale software development projects in grid middleware and the provisioning of national computing centers and networks. The successful deployment of this computing paradigm was a major factor in the ability of the Large Hadron Collider collaborations to rapidly achieve key physics goals, such as the discovery of the Higgs Boson.

In contrast, the data rates and computing power traditionally required by experiments mounted at conventional light source end stations have been relatively modest and adequately addressed within the individual experimental groups. Due to advances in detector technology, the use of computer simulations to design experiments and a desire for near real-time feedback during data collection, light source users are experiencing significant increases in data rates and computational needs. This trend, coupled with the development of open data policies, is leading to more formal computing paradigms. Computing systems and infrastructure developed for the Linac Coherent Light Source at SLAC drew on expertise from the high-energy physics computing community and provides an example of the applicability of the lessons learned in one domain as applied to another.

Bio: Dr. Amber Boehnlein was a staff scientist at Fermi NationalAccelerator Laboratory for 17 years and is a collaborator on the FNAL Tevatron collider experiment DØ. From 2008-2011, she was on assignment to the U.S. Department of Energy in the Office of High Energy Physics where she was the program manager responsible for the oversight of the DOE U.S. Large Hadron Collider Operations program and for three Scientific Discovery through Advance Computing projects. In 2011, she joined SLAC National Accelerator Laboratory and manages the Scientific Computing Applications Division.

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EMSL Auditorium

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