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## **City Tech Hosts International Conference on Theoretical Challenges from the Large Hadron Collider and the Discovery of the Higgs Boson**

Brooklyn, NY—June 6, 2014—Since the discovery of the Higgs boson at the Large Hadron Collider at CERN in Geneva, Switzerland in 2012, physicists have started to investigate the properties of this particle, whose existence is a crucial element in our understanding the behavior of the subatomic world. Furthermore, physicists are searching for signs of other hypothetical particles whose existence could help us answer many questions related to the birth of our universe and to its current structure.

So if you are a physicist working on elementary particle physics, these are exciting times.

On June 18-20, 2014, the Department of Physics and the Center for Theoretical Physics at City Tech (New York City College of Technology-CUNY) will host LoopFest XIII, the latest in a series of workshops focused on the theoretical challenges from the Large Hadron Collider and the ultra-high experimental precision of a future International Linear Collider. Scientists from the U.S. and from 10 countries in Europe will participate in this international workshop.

Following the tradition of the series, LoopFest XIII will focus on recent advances in precision calculations for processes of interest in particle physics phenomenology. Areas will include the potential of the Large Hadron Collider and International Linear Collider for precision measurements, and their role in searching for and disentangling physics beyond the Standard Model.

"Experiments at high-energy particle colliders," says City Tech Professor Andrea Ferroglia, chairman of the local LoopFest XIII Organizing Committee, "seek to test our understanding of the behavior of elementary particles as well as to search for new and unexpected phenomena. The job of a certain group of theoretical physicists is to use the mathematical models that they believe describe the behavior of elementary particles in order to predict on paper what experimentalist will see when they collide particles in the lab.

"The mathematical model we currently employ," Ferroglia notes, "emerged in the early 1970s and, during the last 40 years, survived a very large number of experimental tests. For this reason it became known as the Standard Model, which actually predicted the existence of the Higgs boson. The talks at the conference will describe recent predictions for processes measured at colliders, with a particular emphasis on processes measured by experiments carried out at the Large Hadron Collider."

Two of the members of the Physics Department, Dr. Andrea Ferroglia and Dr. Giovanni Ossola, participated in several of the earlier additions of the LoopFest and are part of the International organizers who brought this event to City Tech. The organizing committee also includes Dr. Sally Dawson

(Brookhaven National Lab), Dr. Doreen Wackerath (SUNY Buffalo), Dr. Frank Petriello (Argonne National Lab and Northwestern University, and Dr. Lance Dixon (Stanford Linear Accelerator Center).

City Tech's LoopFest XIII Local Organizing Committee also includes Professors Ilya Grigorenko, Darya Krym, Viviana Acquaviva, Justin Vazquez-Poritz and Roman Kezerashvili, chair of the College's Department of Physics and director of the Center for Theoretical Physics.

To register, visit <http://www.citytech.cuny.edu/loopfest13/> and click on "Register Now."

The City Tech Center for Theoretical Physics is a unified research and teaching center focused on fundamental physics. Its primary mission is to foster and promote excellence in theoretical physics research with significant focus on mathematical physics, computational physics, condensed matter physics, particle physics, nuclear physics, and astrophysics. The center also aims to educate graduate and undergraduate students in theoretical and computational physics and to communicate its activities to the general public through public lectures and other outreach activities.

For more information about LoopFest XIII, contact Dr. Roman Kezerashvili or Dr. Andrea Ferroglia at 718-260-5276.

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