CHRISTIAN BAUER
LAWRENCE BERKELEY NATIONAL LABORATORY

DEPARTMENT OF ENERGY AWARDEE

For developing crucial computational tools that will enable physicists at the Large Hadron Collider to distinguish new discoveries from known processes; for delivering an event-generator simulation package that captures the most accurate state-of-the-art calculations; and for mentoring future high-energy physicists.

Dr. Bauer is a distinguished young scientist who has made important contributions to the theoretical understanding of particle physics. His research focuses on developing new theoretical techniques to increase the precision in understanding results observed experimentally at particle colliders. In the past, his work has allowed for precise measurements of fundamental parameters that determine the decays of B-mesons. His current emphasis is on understanding the results of the Large Hadron Collider (LHC), which is currently operating at CERN, the European Laboratory for High Energy Physics, in Geneva, Switzerland.

The goal of these experiments is to discover new phenomena and interactions. Bauer's research has helped to separate such new physics from known processes, which occur with much higher probability. One of his most important contributions has been the development of a new effective theory, by now widely used, which has given rise to many new theoretical predictions. He is currently working on the development of an event generator, which will use new theoretical insight to make more precise simulations of results observed at the LHC.

He joined Lawrence Berkeley National Laboratory (LBNL) in 2005 as a divisional fellow and was promoted to senior scientist in 2006. Before coming to LBNL in 2005, he was a Prize fellow at Caltech and a postdoctoral researcher at the University of California at San Diego. Other awards he has received include an Outstanding Junior Investigator Award in 2006, and a Department of Energy Office of Science Early Career Award in 2009.

Dr. Bauer has a strong commitment to training the next generation of scientists. He has taught courses at the University of California at Berkeley and has been advising graduate students throughout his time at LBNL. He also acts as a leader in his community through the organization of workshops and conferences, as well as his many invited presentations at national and international conferences. His research, as well as his service to the DOE makes him one of the role models of his generation of scientists.