

Fall 2019 Colloquium

Department of Physics & Astronomy, TAMU-Commerce

Oct 3, Thursday, 4-5 PM in Science Building 127

(coffee and cookies will be served at 3:50 PM)

Elementary particle physics

The Edge of the Shadow: A Look Beyond the Discovery of the Higgs Particle

Dr. Stephen Sekula

Southern Methodist University



Stephen Sekula is an Associate Professor of Experimental Particle Physics at SMU in Dallas. He earned his B.S. in Physics from Yale University and his Ph.D. in Physics from the University of Wisconsin-Madison. He held post-doctoral positions at MIT and The Ohio State University before joining the faculty at SMU in 2009. His current work focuses on the measurement of the properties of the Higgs particle, especially in its interactions with the second-heaviest matter particle, the bottom quark. In addition to his research and teaching, he recently co-authored a book for a general audience entitled "Reality in the Shadows (or) What the Heck's the Higgs?" with a literal rocket scientist (Frank Blitzer) and a hard-core theoretical physicist (S. James Gates Jr.). More information about Dr.

Sekula can be found at <https://www.physics.smu.edu/sekula/>

Abstract

The discovery of the Higgs particle in 2012 was the end of one story and the beginning of a new one. While the Higgs particle was long-expected and aggressively sought, its discovery and the measurement of its properties leaves us with a clear set of frustrating questions that set the stage for the discoveries of the coming decades. In this talk, I will review the motivation for the existence of the Higgs particle, discuss how one produces and identifies this elusive particle, and motivate next steps not only in the study of the Higgs but in the wider context of what we want to know about the universe.