

Faculty of Science



PROF. MARK TRODDEN University of Pennsylvania Embracing the Dark Side: In Search of the Missing Pieces of the Cosmic Puzzle

For most of the last century, physicists pushed our understanding of the microscopic world down to ever-smaller sizes, splitting the atom to reveal its inner workings and making astonishing new discoveries, including most recently, the Higgs particle. At the same time, other scientists — astronomers — have continued to look to the skies for "the big picture" of the universe, peering beyond our galaxy and looking back to the beginning of time. They have discovered that the

universe contains mysterious new entities — dark matter and dark energy — and that the Big Bang may have arisen through the dramatic expansion of cosmic inflation, about which we have gained crucial new knowledge just in recent years. In this lecture we will explore how modern cosmology weaves together these seemingly distinct strands of knowledge, turning our telescopes into microscopes, and allowing us to read the hitherto unknown dark side of the universe.

