

What keeps me up at night: Unanswered questions in fundamental physics

For millennia, philosophers and theologians have pondered the ultimate nature of reality. While these early efforts paved the way, real progress in this area began with the development of the scientific method. Over the past century, physicists interested in the fundamental nature of matter, energy, space, and time have learned a great deal about the laws that govern the physical world. Vast clusters of galaxies and tiny quarks and leptons have begun to yield some of their secrets. However, the job is not done and not all questions have been answered. In this talk, I will introduce some of the big unanswered questions of particle physics and cosmology and describe some of the ways in which researchers are trying to answer them.