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CHAired by: Dr. Ozgur Mehmet Sahin (CEA-IRFU, University Paris-Saclay)

Abstract: Quantum science emerged from studies of the smallest objects in nature. Today, it promises to deepen our understanding of the universe and deliver groundbreaking technology, from quantum computers to ultra-precise measuring devices to next-generation materials, quantum sensing, quantum communication with the many interesting applications in quantum cryptography for instance. The basic concepts underlying the field of quantum science, including superposition, entanglement, and the uncertainty principle are indeed the basics for developing such novel technological approaches and application. This keynote will recall how quantum Physics principles and our understanding of them are harnessed to benefit society and catalyze new research across disciplines as well as great prospects in technological developments.

Lecturer: Marcela Carena is a distinguished scientist and the head of the Theoretical Physics Department at the Fermi National Accelerator Laboratory in Batavia, Illinois. She received her Diploma in Physics from the Instituto Balseiro of Bariloche, Argentina, and her Ph.D. in Physics from the University of Hamburg. She was a John Stuart Bell Fellow at CERN, was awarded a Marie Curie Fellowship, and she was a CERN staff member in 1999-2000. She has been a Professor of Physics at the University of Chicago since 2008, where she is both a member of the Enrico Fermi Institute and the Kavli Institute for Cosmological Physics (Text informed by Lecturer)..

More info on Prof. Carena's research and teaching activities, in the [Link](#) here below.

Presenter: Prof. CARENA, Marcela (FNAL Theory Dept Head and University of Chicago)