

## COLLOQUIUM

Thursday April 17, 2025 3:30 PM - 4:30 PM, Virtual https://asu.zoom.us/j/81793489607 Galaxies As Probes Of The Particle Physics Nature Of Dark Matter Dr. Mariangela Lisanti Princeton University



## Abstract:

The hypothesis of Cold Dark Matter (CDM) has been spectacularly confirmed on the largest scales of the Universe and must now be stress-tested on sub-galactic scales. Many well-motivated and generic alternatives to CDM can leave spectacular signatures on precisely these scales, affecting the evolution of galaxies as well as their population statistics. Excitingly, over the course of the next decade, a flood of astrophysical data will open the possibility of searching for these distinctive imprints and shedding light on key questions about dark matter. I will review the promise of upcoming data as well as recent theory advancements for modeling dark matter physics on these scales.

## **Biography:**

Mariangela Lisanti is a professor of physics at Princeton University and a research scientist in the Center for Computational Astrophysics at the Flatiron Institute. She is an astroparticle theorist and leads a group at Princeton researching the nature of dark matter. She earned her B.S. from Harvard University, summa cum laude, in 2005 and her Ph.D. from Stanford in 2010. She joined the Princeton faculty in the Department of Physics in 2013. She is also a faculty fellow at the Princeton Center for Theoretical Science and a participating faculty member at the Center for Statistics and Machine Learning. She has received numerous awards and honors over the years, including the President's Award for Distinguished Teaching at Princeton University and the Simons Investigator Award, from the Simons Foundation. She also currently chairs the Princeton Physics Department's Equity, Diversity, and Inclusion Initiative.