

# Symmetries: Gateway to Particle Physics

A colloquium sponsored by the Society of Physics Students



## Dr. Digesh Raut



Understanding of symmetries has yielded unparalleled insights into the nature and origin of physical laws, the origin of quantum spins, and the nature of spacetime itself. In this talk, I will primarily focus on Gauge Symmetries, which form the foundation of modern particle physics, and discuss the nature and origin of forces that mediate particle interactions. Gauge symmetry breaking is equally intriguing; I will briefly discuss how it generates particle masses and forms exotic topological objects like domain walls and magnetic monopoles.

**Friday, December 1st, 2023**

**4:00 PM EST in Jepson 225**

Please contact SPS president Abby Swanson at [aswanson2@mail.umw.edu](mailto:aswanson2@mail.umw.edu) with any questions!

Hosted by the Department of Chemistry and Physics

**Open to all who wish to attend**

