



# Colloquium Notice

**Ian Moulton**

**Yale University**

*Imaging the Intrinsic and Emergent Scales of  
Quantum Chromodynamics with Colliders*

The most powerful means of understanding nature at the smallest length scales is through the use of particle colliders. Colliders smash particles together at high energies, briefly producing new particles through quantum fluctuations, which then decay into complicated sprays of energy in surrounding detectors. Much in analogy with how the details of our cosmic history are imprinted in the cosmic microwave background, the detailed features of the interactions of elementary particles are imprinted into macroscopic correlations in the energy flow of the collision products. Understanding the underlying microscopic physics in collider experiments therefore relies on our ability to decode these complicated correlations in energy flow. In turn, the desire to understand how to compute collider observables from an underlying quantum field theory (QFT) description has been a driver of theoretical developments and insights into the structure of QFT.

Monday

**April 3, 2023**

Starts at 12:15 PM

Coffee at 12:00 PM

Physics Conference Room, SB B326

This talk is accessible via [Zoom](#) or use

**meeting ID 829 2687 2594** and **passcode 866995** to join