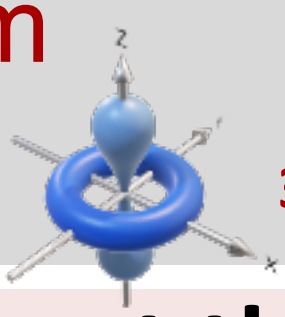
Department of Physics Colloquium

February 5, 2024 **3:00 PM**



Strong Interactions at the Precision Frontier

Chien Yeah Seng
Michigan State University

In this talk I will explain my research interest, which lies at the interface between the strong and the electroweak sector of the Standard Model (SM) of particle physics. The failure of the SM to explain many important observed phenomena in the universe calls for the search of physics beyond the Standard Model (BSM).

I work on high-precision studies of hadron/nuclear physics, governed by the strong interaction in the non-perturbative regime, that are relevant to low-energy experiments at the precision frontier. I will showcase a selection of my recent research highlights, which covers a wide range of precision experiments such as charged weak decay processes, lepton-nucleus scattering, searches of permanent electric dipole moments, and hadronic parity violation. Our high-precision theoretical analysis turns these experiments into powerful tools to test various fundamental symmetries in the SM and to search for BSM physics. Finally, I will outline my immediate, short-term, and long-term research plans at Temple (if hired), featuring a systematic effort to synergize with the existing research program in the Department of Physics and to expand its coverage.

This colloquium will be held in-person, in SERC 116