

## **Title: Probing QGP Properties at the sPHENIX Experiment**

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The upcoming sPHENIX experiment is the next generation of large acceptance detector at RHIC, whose scientific goals center on probing the strongly interacting Quark-Gluon Plasma (QGP) with precision measurements of jets, heavy flavor, and upsilon production. The sPHENIX experiment is currently under construction and scheduled for first data in early 2023. Built around the excellent BaBar superconducting solenoid, the central detector consists of a silicon pixel vertexer adapted from the ALICE ITS design, a silicon strip detector with single event timing resolution, a compact TPC, novel EM calorimetry, and two layers of hadronic calorimetry. The hybrid streaming/triggered readout of the detector enables the full exploitation of the luminosity provided by RHIC. sPHENIX will significantly expand the observables and kinematic reaches of these measurements at RHIC and provide a comparison with the LHC measurements in the overlapping kinematic region. The talk will describe the readiness of the experiment for operations, present current projections of key jet, upsilon, heavy flavor, and cold QCD measurements, and discuss their potential scientific impact.