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Unlocking the physics of the the Quark Gluon Plasma with the sPHENIX experiment at RHIC

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The sPHENIX detector currently under construction at Brookhaven National Laboratory's Relativistic Heavy Ion Collider (RHIC) is designed to significantly advance studies of the microscopic nature of the Quark Gluon Plasma. With a multi-year physics program beginning in 2023, sPHENIX employs state-of-the-art detector technologies and will fully exploit the highest planned RHIC luminosities. The experiment incorporates a high rate DAQ to collect data from full azimuth vertexing, tracking, and electromagnetic and hadronic calorimetry over the pseudorapidity range $|\eta|<1.1$ and will deliver unprecedented data sets for a wide variety of multi-scale measurements at RHIC, including studies of jet modification, upsilon suppression and open heavy flavor production in p+p, p+Au, and Au+Au collisions. In this talk, we will present an overview of the planned sPHENIX QGP physics program and progress toward the realization of the detector.

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