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The sPHENIX Detector: The Future of Heavy-Ion Collisions at RHIC, and a Foundation for an EIC Detector

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The 2015 US Nuclear Physics Long Range Plan called for a state-of-the-art jet and upsilon detector at RHIC, called sPHENIX, to study the microscopic nature of the Quark Gluon Plasma in Heavy Ion collisions, complementing similar studies at the CERN LHC. The sPHENIX detector will provide precision vertexing, tracking and full calorimetry over pseudorapidity $|\eta| < 1.1$ and full azimuth at the full RHIC collision rate, delivering unprecedented data sets for jet and upsilon measurements at RHIC. In the same Long Range Plan, an Electron-Ion Collider was recommended as the highest priority for future construction. The EIC will allow for precision measurements of the partonic and spin structure of hadronic and nuclear matter using e+p and e+A collisions. In this talk I will present an overview of the sPHENIX detector design, expected construction and running schedule, and planned physics program. I will highlight the possibility to complement sPHENIX with additional forward instrumentation for spin polarized p+p/A physics and the potential to evolve sPHENIX into a spin polarized e+p/A detector at a future EIC.

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