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Entering the Electronic Age at RHIC: eRHIC

CHRISTINE AIDALA, University of Michigan

After enjoying a stream of thought-provoking results from the Relativistic Heavy Ion Collider (RHIC) for more than a decade, the QCD community is now contemplating the compelling physics that RHIC, as the most versatile hadron collider in the world, will be well positioned to explore beyond the program planned for upgrades already in progress. As the fields that RHIC set out to investigate have advanced and evolved, new questions and directions have arisen at the frontiers of QCD, and we have exciting opportunities before us to continue to confront the challenges and surprises of strong interactions into the next decade and beyond. The addition of an electron beam to what is already such a flexible collider would create a formidable machine offering unprecedented and very broad opportunities for the study of QCD in hadrons and nuclei, allowing full exploitation of the complementary nature and interplay of electron-hadron and hadron-hadron collisions. Such a facility would for example allow us to perform precision spatial and momentum mapping of the structure of the nucleons and nuclei of everyday matter, study the physics of strong color fields in nuclei, explore in detail the effects of soft scales on hard partonic processes, and confront the question of the transition from asymptotically free quarks and gluons to final-state hadrons observable in the laboratory. Some of the prospects for an initial eRHIC program will be presented.