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eRHIC: The BNL vision of an electron-ion collider

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An electron-ion collider (EIC) will be the “QCD Laboratory” of the future. Combining high luminosity and polarization with the flexibility to collide electrons with ions ranging from protons to uranium nuclei will enable experimental investigations of the structure of the quarks sea and gluon ocean in nucleons and nuclei with unprecedented precision and kinematic leverage. The EIC will also enable femtosopic studies of the dynamics of QCD processes from the perturbative to the confinement regime. I will describe how RHIC can be converted into an EIC serving a world-wide community of scientists interested in exploring the many remaining mysteries of how quarks and gluons conspire to build nucleons and nuclei.