

## eRHIC - an electron-ion collider at BNL

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The electron-ion collider eRHIC aims at a luminosity around  $10^{34} \text{ cm}^{-2} \text{ sec}^{-1}$ . The design is based on the existing Relativistic Heavy Ion Collider (RHIC) facility, which has successfully accelerated, stored and collided polarized proton beams of up to 255 GeV as well as ions up to 100 GeV/n beam energy. A 5-18 GeV electron storage ring will be added in the RHIC tunnel, thus providing electron-polarized proton or electron-ion collisions in up to two interaction regions. A spin-transparent rapid-cycling synchrotron (RCS) will serve as full energy polarized electron injector, thus enabling arbitrary spin patterns in the electron storage ring.

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