

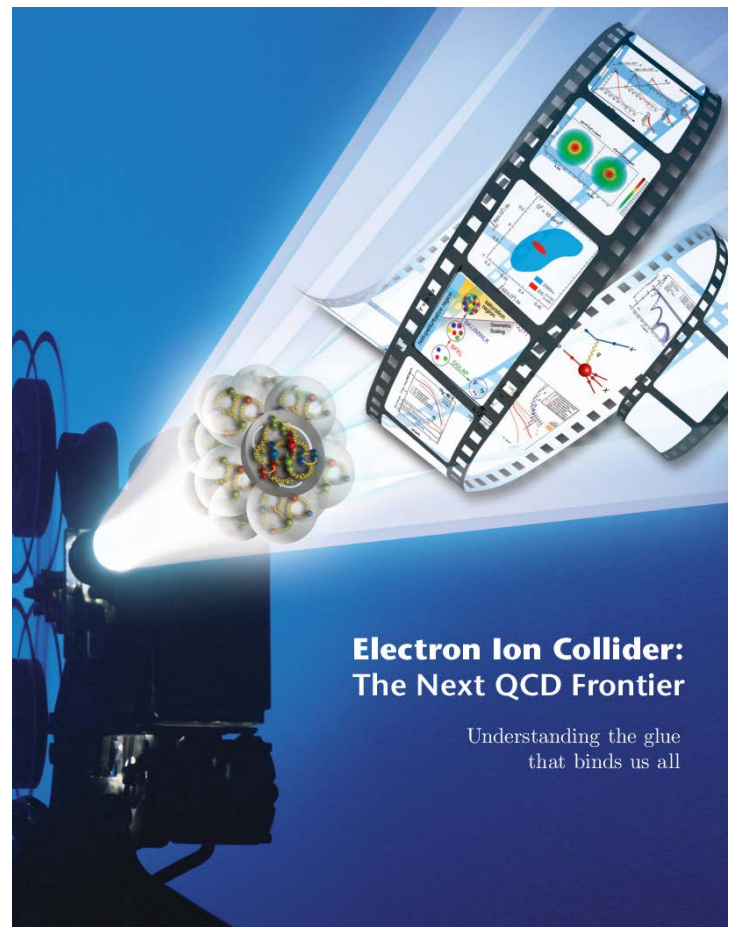


eRHIC: New Scientific and Technology Frontiers to do Parton Femtoscopy.

Elke-Caroline Aschenauer (BNL)

Tuesday, 09 April 2013, 16:45 h
Auditorium

Our understanding of the structure of nucleons is described by the properties and dynamics of quarks and gluons in the theory of quantum chromodynamics. With advancements in theory and the development of phenomenological tools we are preparing for the next step in subnuclear tomographic imaging at a future electron-ion collider. High center-of-mass energies ($\sqrt{s} \approx 45 - 150 \text{ GeV}$) in combination with extremely high luminosities ($10^{33-34} \text{ cm}^{-2} \text{ s}^{-1}$) will provide the precision and a kinematic reach well into the gluon dominated regime of very low parton momenta where a saturation of the gluon density is expected, in particular in collisions of electrons with heavy nuclei. In addition, highly polarized nucleon and electron beams ($P_{beam} \approx 70\%$) can probe the parton polarizations in previously unexplored kinematic regions and unprecedented accuracy, as well as address the role of orbital angular momentum with respect to the nucleon spin. This talk will summarize the theoretical and technical challenges of such a versatile experimental endeavour as planned with the eRHIC facility at Brookhaven National Laboratory.



- **Coffee, tea and cookies will be served at 16:30h**
- **After the seminar there is a chance for private discussions with the speaker over wine and pretzels**