



Contribution ID: 104

Type: **Oral Presentation**

## The US-based Electron-Ion Collider: Imaging the Gluons and Quark Sea of Nucleons and Nuclei

*Monday 7 September 2015 09:40 (40 minutes)*

The interior landscape of nucleons includes a strong-force driven sea of quarks, antiquarks and gluons, with a net surplus of a few ever-present valence quarks. In order to understand how the properties and structure of all forms of nuclear matter emerge from the dynamics of QCD, it is essential to precisely image the gluons and quarks, and to understand the role they and their interactions play in nucleons and nuclei. For this, a new accelerator facility is required, the Electron-Ion Collider, to match the valence quark studies of the upgraded Jefferson Lab. Such a future facility would be the world's first polarized electron-proton collider, and the world's first e-A collider. The science foreseen at and the status of such a future US-based polarized Electron-Ion Collider will be presented.

**Author:** ENT, Rolf (Jefferson Lab)**Presenter:** ENT, Rolf (Jefferson Lab)**Session Classification:** Keynote**Track Classification:** Future DIS facilities