

# Department of Physics

Particle Physics

The Denys Wilkinson Building, Keble Road, Oxford OX1 3RH



## Experimental Particle Physics Seminar

at 2.15 pm

Tuesday 24 November 2020

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**Brookhaven National Laboratory**

### **The electron-ion collider: A collider to unravel the mysteries of visible matter**

#### **Abstract**

Understanding the properties of nuclear matter and its emergence through the underlying partonic structure and dynamics of quarks and gluons requires a new experimental facility in hadronic physics known as the Electron-Ion Collider (EIC). The EIC will address some of the most profound questions concerning the emergence of nuclear properties by precisely imaging gluons and quarks inside protons and nuclei such as their distributions in space and momentum, their role in building the nucleon spin and the properties of gluons in nuclei at high energies. In January 2020 the EIC received CD-0 and Brookhaven National Laboratory was selected as site. This presentation will highlight the capabilities of an EIC, discuss the accelerator design and the concepts for the experimental equipment and give the status of the EIC project.