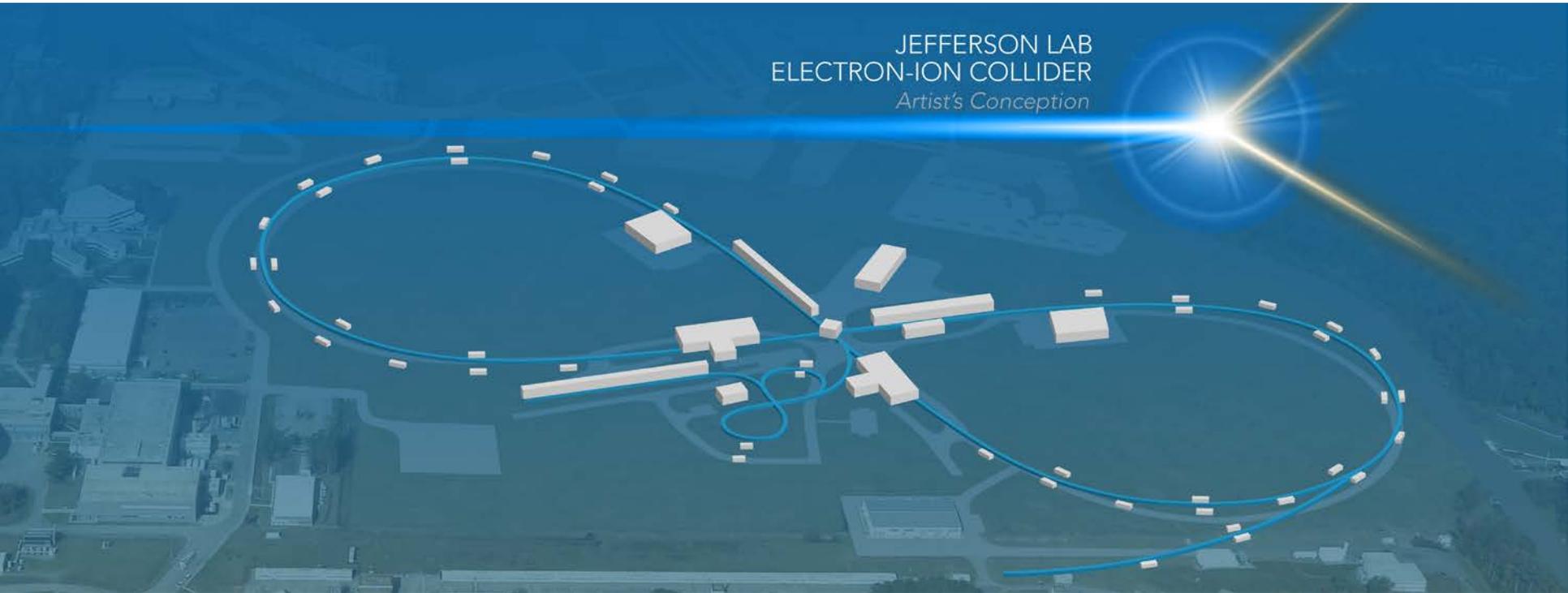


Jefferson Lab and the Electron-Ion Collider: Status Update



JEFFERSON LAB
ELECTRON-ION COLLIDER
Artist's Conception

Stuart Henderson, Director

The EIC brings tremendous opportunities for scientific educational leadership, and economic impact to Virginia

Scientific leadership

- JLab poised to become the hub of nuclear physics world-wide: the “CERN of Nuclear Physics,” attracting ~3,000 scientists
- EIC will secure Virginia’s position as the US home for cutting-edge fundamental research *for the next 40 years – this is Jefferson Lab’s future!*

Educational opportunities

- Will engage Virginia’s universities across tech talent areas needed to carry-out EIC’s world leading scientific program including high performance computing, data sciences, artificial intelligence, and visualization, applied math and statistics

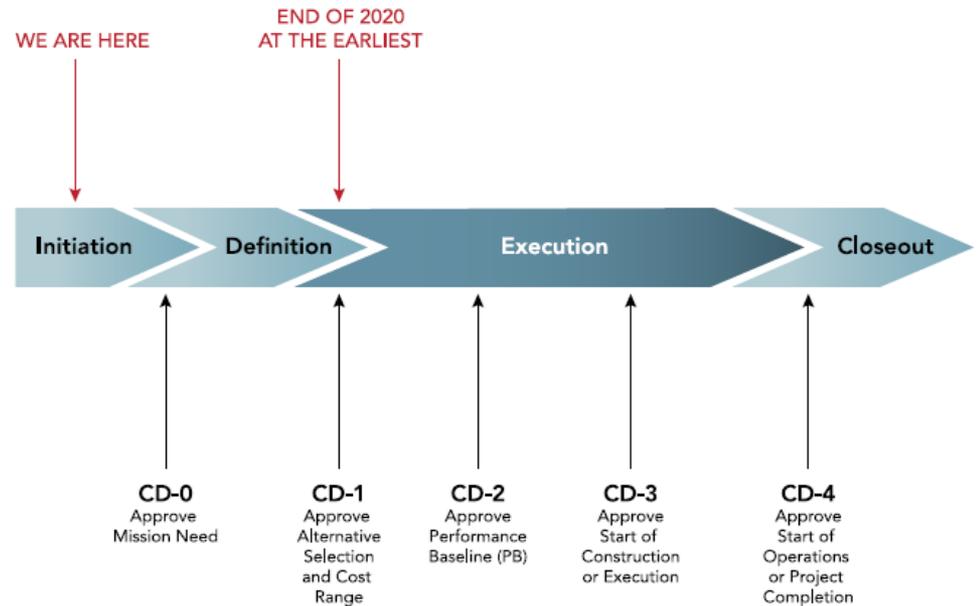
Economic impact

- \$2B in DOE investment to VA, with construction and high-tech jobs
- Increased operating funds and staffing for Jefferson Lab
- Economic Impact:
 - U.S.: **\$4.7B**; 29,200 employee-years; Virginia: **\$1.4B**; 10,830 employee-years



Latest EIC Update and Path Forward

- DOE is moving forward with a request for CD-0 (approve Mission Need) which marks the start of the Project
- The FY 2020 President's Budget Request to Congress includes \$1.5M in initial project funding.
- The FY 2020 House Mark includes \$10M R&D/design and \$1M construction funding.
- An Independent Cost Review is nearing completion
- DOE has organized a panel to assess options for siting and consideration of "best value" between the two proposed concepts
- **The recommendation of this panel may result in a site selection very soon (even in advance of CD-0) or the DOE could decide to make the site-selection at the next approval step**



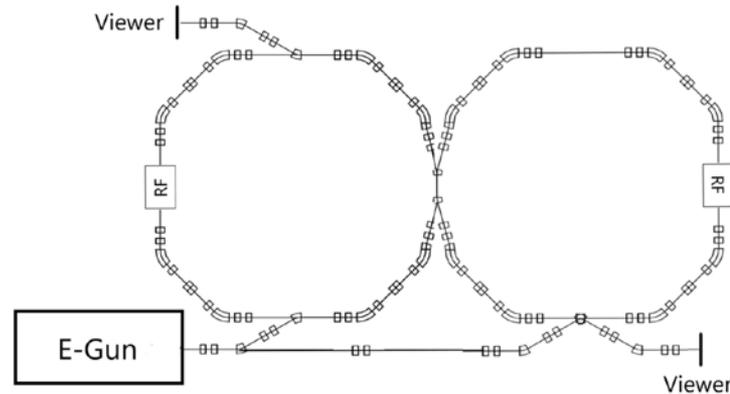
Advancing the JLEIC Concept Through Two Demonstration Facilities

Partner institutions are collaborating to address two significant aspects of the Jefferson Lab EIC design—the interaction of the two beams in collision and the method for cooling the beams to maximize the performance of the collider.

These critical Demonstrators address key R&D challenges that will strengthen the JLEIC concept. They also result in very capable R&D facilities that will be unique in the world

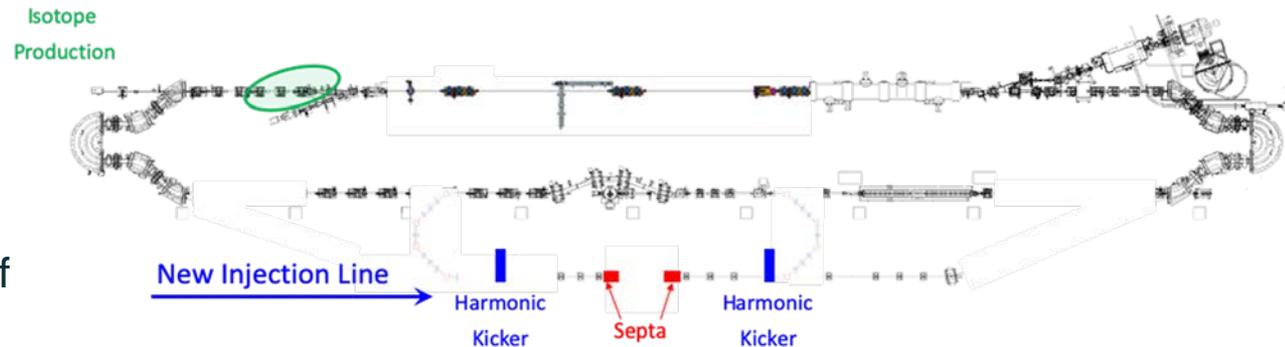
Beam-beam Experiment

Objective: Investigate the interaction of two beams in collision, while leveraging available space in the ODU Center for Accelerator Science



Circulating Ring

Objective: Leveraging an existing facility at Jefferson Lab, investigate the method for cooling the beams to maximize the performance of the collider



Partner Institutions



WILLIAM & MARY

CHARTERED 1693



VCU

VIRGINIA COMMONWEALTH UNIVERSITY



VIRGINIA TECH.

HAMPTON
UNIVERSITY



UNIVERSITY
of VIRGINIA

GEORGE
MASON
UNIVERSITY