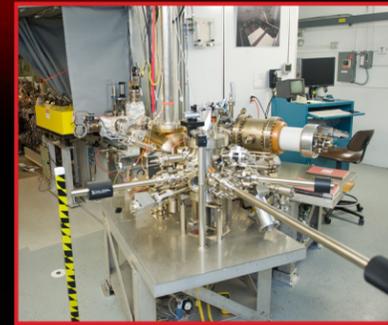
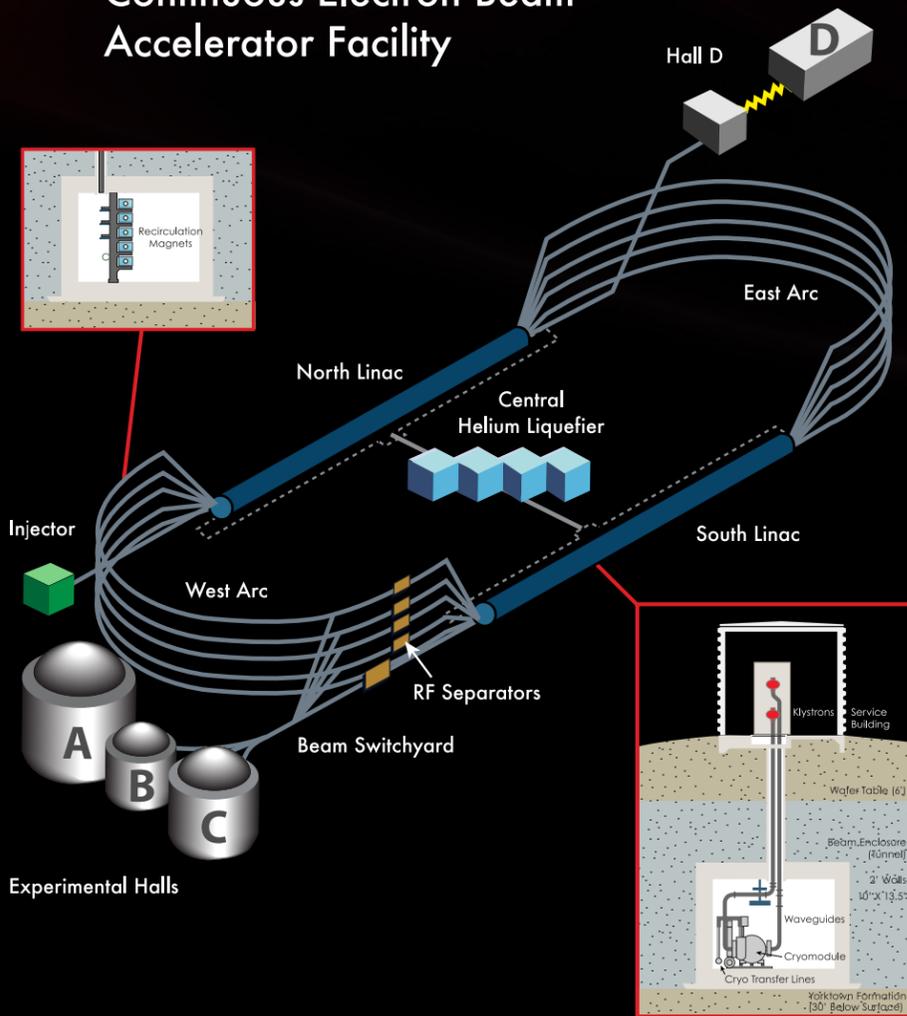




CEBAF at Jefferson Lab

Continuous Electron Beam Accelerator Facility



Injector

The injector is the source of polarized electron beams used in experiments at Jefferson Lab.



Linear Accelerator

Each of the two linacs have 25 cryomodules. Five and a half passes through the two linacs produce beams up to 12 GeV.



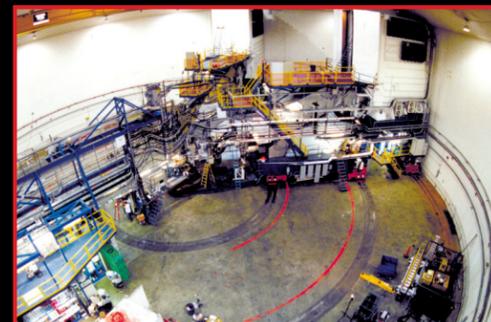
Recirculation Magnets

Quadrupole and dipole magnets focus and steer the beam through the arcs connecting one linac to the other.



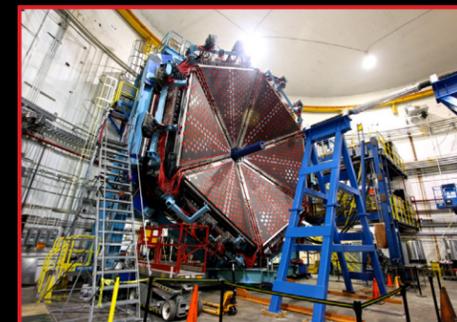
Central Helium Liquefier

The Central Helium Liquefier keeps the accelerator cavities at -456 degrees Fahrenheit, just a few degrees above absolute zero.



Experimental Hall A

Hall A is configured with two High Resolution Magnetic Spectrometers for precise measurements of the inner structure of nuclei. The hall is also used for one-of-a-kind, large-installation experiments.



Experimental Hall B

The CEBAF Large Acceptance Spectrometer surrounds the target, permitting researchers to measure simultaneously many different reactions over a broad range of angles.



Experimental Hall C

The Super High Momentum Spectrometer and the High Momentum Spectrometer will make precise measurements of the inner structure of protons and nuclei using the maximum available beam energy and current.



Experimental Hall D

Hall D is configured with a superconducting solenoid magnet and associated detector systems that are used to study the strong force that binds quarks together.

Performing World Class Research

The U.S. and international nuclear physics community uses Jefferson Lab's state-of-the-art Continuous Electron Beam Accelerator Facility or CEBAF to conduct world-class fundamental research. The Lab supports more than 1,250 visiting researchers from more than 200 institutions and employs more than 700 people.

Exploring The Nature Of Matter

Scientists know that protons and neutrons consist of particles called quarks. How quarks bind together and why they cannot be isolated are two of the many mysteries that researchers using CEBAF at Jefferson Lab hope to unravel.

Accelerator Capabilities

- High-energy (~12 GeV), continuous wave (CW) polarized electron beams to probe the nucleus
- Continuous, high-current beam (85 μ A at 12 GeV) for complete data collection at high rates
- Polarized parity-quality electrons for precise high-resolution measurements
- Simultaneous beams to multiple experimental halls