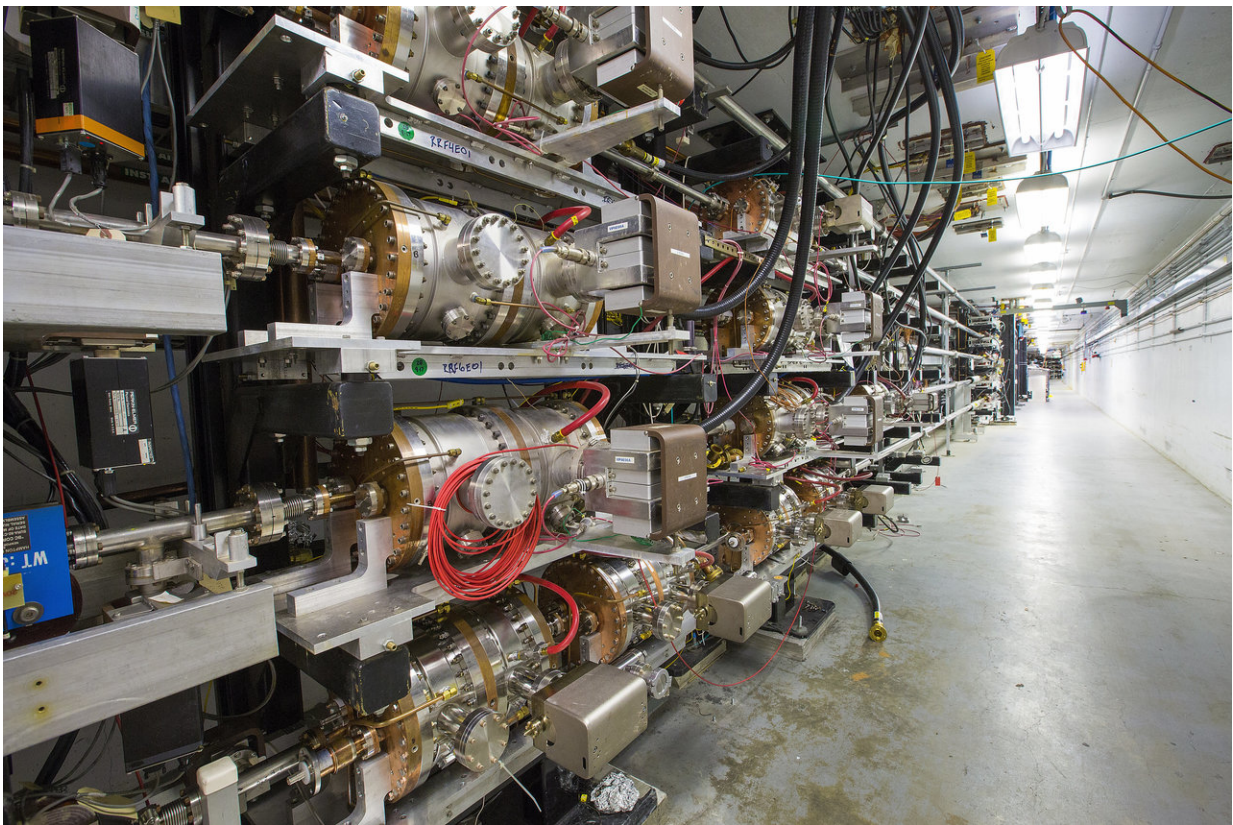


# Continuous Electron Beam Accelerator Facility delivers beam to all four of its experimental areas simultaneously

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The cylindrical devices seen here, called separators, are just one of several technological advances that allow CEBAF to simultaneously deliver electron beams to its four different experimental halls. Credit: DOE's Jefferson Lab

Just months after completing a nine-year construction project to upgrade its research capabilities, the Department of Energy's Thomas Jefferson National Accelerator Facility has delivered its next technological success: For the first time, the Continuous Electron Beam Accelerator Facility (CEBAF) has delivered electron beams simultaneously to all four experimental halls. This achievement maximizes the amount of research that can be accomplished during run times and paves the way for the next era of ground-breaking experiments at the lab.

In September, Jefferson Lab officially completed the \$338 million construction project to upgrade CEBAF's research capabilities from 6 GeV to 12 GeV and add a new experimental hall. Originally, the laboratory envisioned delivering electron beams to up to three of its four experimental halls simultaneously upon completion of the upgrade.

It wasn't thought to be technologically feasible to provide beam to all four halls, however while the upgrade was in progress Jefferson Lab staff made technological advances in equipment and accelerator capability, opening the door to providing additional research capacity.

On Jan. 12 at 8:04 p.m., CEBAF began delivering [beam](#) to all four experimental areas.

According to Rolf Ent, Jefferson Lab's Associate Director for Experimental Nuclear Physics, the accomplishment opens the possibility of CEBAF, an Office of Science User Facility, to deliver electron beams for an even richer program of study for its more than 1,500 Users worldwide.

"This means that we can now study four different topics in nuclear physics simultaneously," said Ent. "Being able to run experiments in all four halls at the same time allows us much more flexibility in scheduling experiments to maximize the research we can accomplish. Now, by

smart scheduling and operation, we can gain at least 25 percent more in [physics](#) output, and possibly more!"

Jefferson Lab is a world-leading [nuclear physics](#) research laboratory devoted to the study of the building blocks of matter inside the atom's nucleus - quarks and gluons - that make up 99 percent of the mass of our visible universe.

Provided by Thomas Jefferson National Accelerator Facility

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