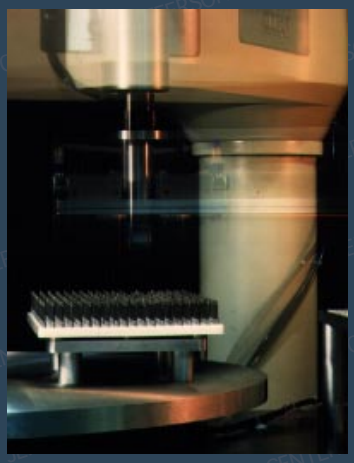
JEFFERSON CENTER

FOR RESEARCH AND TECHNOLOGY

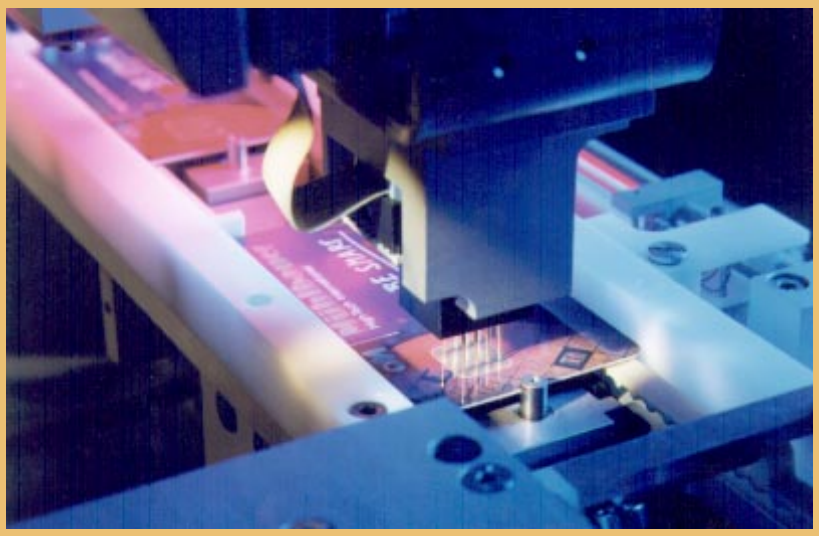


A GREAT CLIMATE FOR GROWTH!

Newport News
Virginia

JEFFERSON CENTER
FOR RESEARCH AND TECHNOLOGY

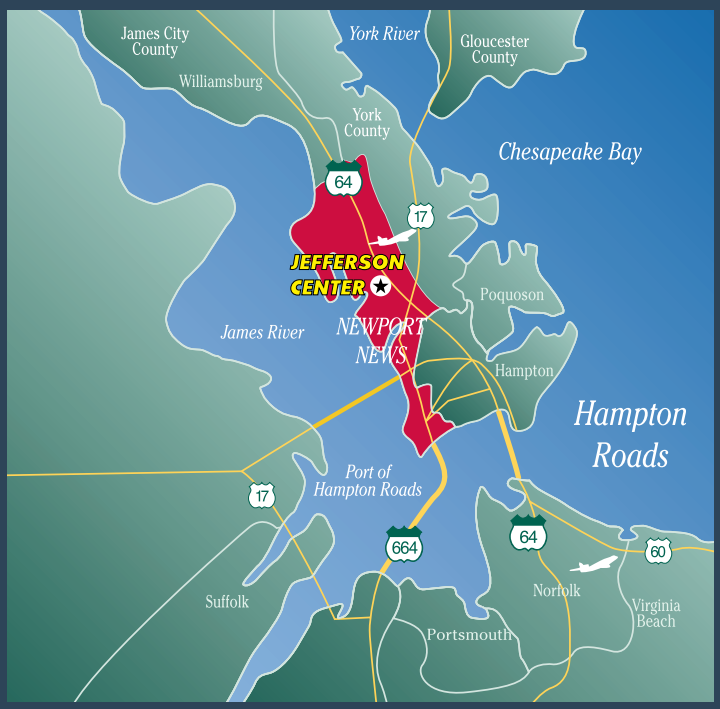
Jefferson Center is a new 200 acre, high-technology complex adjacent to Jefferson Lab. It provides prime sites and class A space to companies seeking direct access to the technology applications and research opportunities at Jefferson Lab. Jefferson Center is being developed by the City of Newport News, in collaboration with the Southeastern Universities Research Association (SURA) and The College of William and Mary.

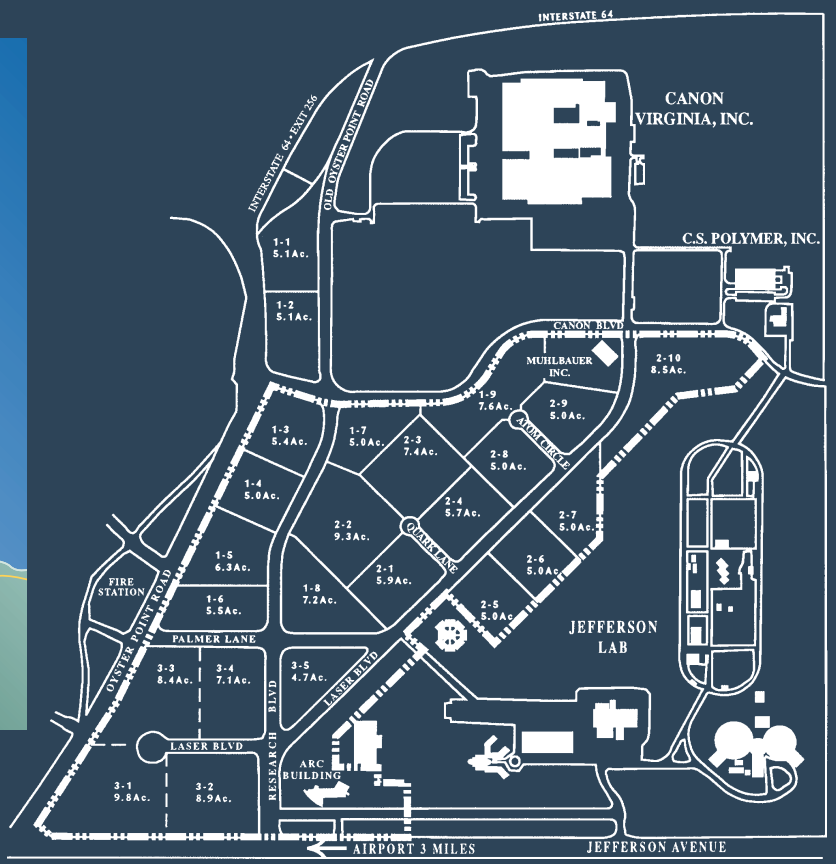


Final testing of a smart card produced by Mühlbauer High Tech International

Canon Virginia's 800,000 square foot building is Canon's largest manufacturing facility in North America. They produce copiers, laser printers and toner cartridges.

Jefferson Center offers an ideal environment for high-technology firms looking for office, laboratory and manufacturing space near the accelerator-related expertise and the Free Electron Laser technology at Jefferson Lab.





Graduate student works on injector test stand for the Free Electron Laser

Jefferson Lab's underground Continuous Electron Beam Accelerator

Jefferson Lab

Jefferson Lab was built by the U.S. Department of Energy to achieve a fundamental scientific understanding of the atomic nucleus. The Lab's research begins in an underground accelerator in a tunnel nearly a mile in circumference and ends in the three experimental areas where the research is conducted. The $600 million complex, managed by the Southeastern Universities Research Association, provides research opportunities for more than 1,200 scientists from around the globe. Some mission-related technologies developed at the Lab include cryogenics, real-time process control software and detector technology.

DuPont, Northrop Grumman, IBM, Xerox, The College of William and Mary, Old Dominion University, the U.S. Navy and others form a Laser Processing Consortium guiding the development of the Free Electron Laser (FEL) for various industrial materials processing applications. The FEL is expected to demonstrate commercial uses in micro fabricating, polymer surface processing, electronics, and metal surface processing.

Technicians processing superconducting accelerator components

Liquid light guides developed at Jefferson Lab find wide application in industry

RESEARCH PARTNERS

Among the numerous and varied partners of Jefferson Lab are many private corporations and the 41 members of the Southeastern Universities Research Association. The research specializations and synergies of key local partners include...

THE COLLEGE OF WILLIAM AND MARY

One of Jefferson Center's key partners is The College of William and Mary, the nation's second oldest university, chartered by the British Royal Crown in 1693. The standard of excellence established by the College is its nationally-ranked undergraduate program, complemented by strong graduate programs in Applied Science, Chemistry, Computer Science and Physics. These faculty and programs, brought together at Jefferson Center's ARC Building, will apply today's industrial technology and research in materials, surface science, non-destructive evaluation and polymer science to the development of the Free Electron Laser and other scientific fields of importance to industry.

The College of William and Mary's Applied Science Department processes and tests advanced semiconductor wafers

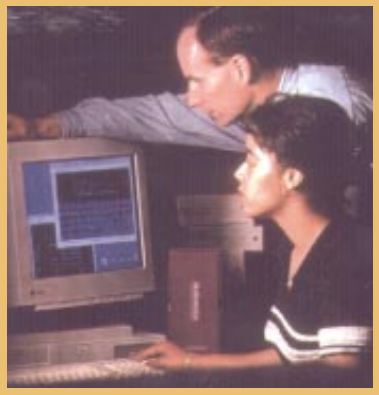
OLD DOMINION UNIVERSITY

The College of Engineering and Technology offers nine graduate engineering degrees at Old Dominion University in Norfolk. The Physical Electronics Research Institute operates the Ultrafast Science and Pulse Power Laboratories at the University. Both labs have a variety of lasers useful in benchmarking laser-material interactions, exploring optical and electronic diagnostic techniques, and studying semiconductor processing methods. The Department of Chemistry operates the Material Science Laboratories with capabilities in magnetic resonance imaging, thermal analysis, and Raman spectroscopy.

Old Dominion University student testing experimental equipment at Jefferson Lab

CHRISTOPHER NEWPORT UNIVERSITY

The Laser Photonics and Application Specific Integrated Circuit Laboratories at Christopher Newport University offer research synergies with Jefferson Lab's programs. Research concentrates in the areas of integrated circuits, lasers, photonics, environmental monitoring and solid state sensors.



Professor and student in Christopher Newport University's integrated circuit laboratory

Czochralski crystal growth laboratory at Norfolk State University

NORFOLK STATE UNIVERSITY

Norfolk State University's Center for Materials Research has grown rapidly since its inception in 1992, with strong support from the Department of Energy, Los Alamos National Laboratory, and NASA Langley Research Center. Research investigations of inorganic materials utilize Czochralski crystal growth, laser spectroscopy, nuclear magnetic resonance, and electron spin resonance laboratories. Studies of organic/inorganic interfaces and surface processing of a variety of materials are being planned to take advantage of Jefferson Lab's Free Electron Laser capabilities.

NASA Langley Research Center's Transonic Wind Tunnel

NASA LANGLEY RESEARCH CENTER

Since 1917, NASA Langley Research Center (LaRC) has been a world leader in pioneering science and innovative technology, particularly in aerospace research. The federal lab's 1,300 science and engineering professionals are a formidable intellectual resource near Jefferson Center in the Hampton Roads Region. The Technology Applications Group (TAG) matches promising NASA research with U.S. businesses. LaRC is NASA's Center for Excellence in materials and structures including research in polymers, lasers, optics, and non-destructive technologies.

New initiatives like the Virginia Microelectronics Consortium, chartered to provide educational and R & D support to the Commonwealth's burgeoning semiconductor fabrication industry, offer exciting partnership opportunities.

ARC BUILDING

The ARC (Applied Research Center) Building is a new seven story, 121,000 square foot facility designed to foster collaboration between high-technology firms, Jefferson Lab, and several local research universities. The College of William and Mary, Old Dominion University, Christopher Newport University and Norfolk State University conduct research and development activities in the ARC Building. Over 15,000 square feet of the facility is set aside for private businesses interested in exploring and utilizing technologies related to Jefferson Lab and university research and development.

The ARC Building contains 27 state-of-the-art laboratories, including a materials analysis lab with TEM, SEM, AES and XPS equipment, as well as a photonics lab with a full array of conventional lasers and excimer lamps. The class A space also includes offices, classrooms, advanced computer facilities and a technical library—all designed to encourage productive, stimulating interaction among all the researchers in the ARC Building.

"The ARC Building provides the best collaborative research environment for corporations like ours to explore the commercial applications of Jefferson Lab's many technologies. We are particularly interested in the Free Electron Laser's potential for treating synthetic fibers."

DR. MICHAEL J. KELLEY
DUPONT CENTRAL RESEARCH
AND DEVELOPMENT

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JOHN PEMBERTON

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JAN MILLER GRAPHICS

FRONT COVER

TOP LEFT
Jefferson Lab's Free Electron Laser high power source

TOP RIGHT
Jefferson Lab's administration building

BOTTOM LEFT
ARC Building

BOTTOM RIGHT
Robotic grinding of automotive fuel system parts by Engineering Development Laboratory, Inc.

A GREAT CLIMATE FOR GROWTH!

Newport News Virginia

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