
WELCOME TO JEFFERSON LAB

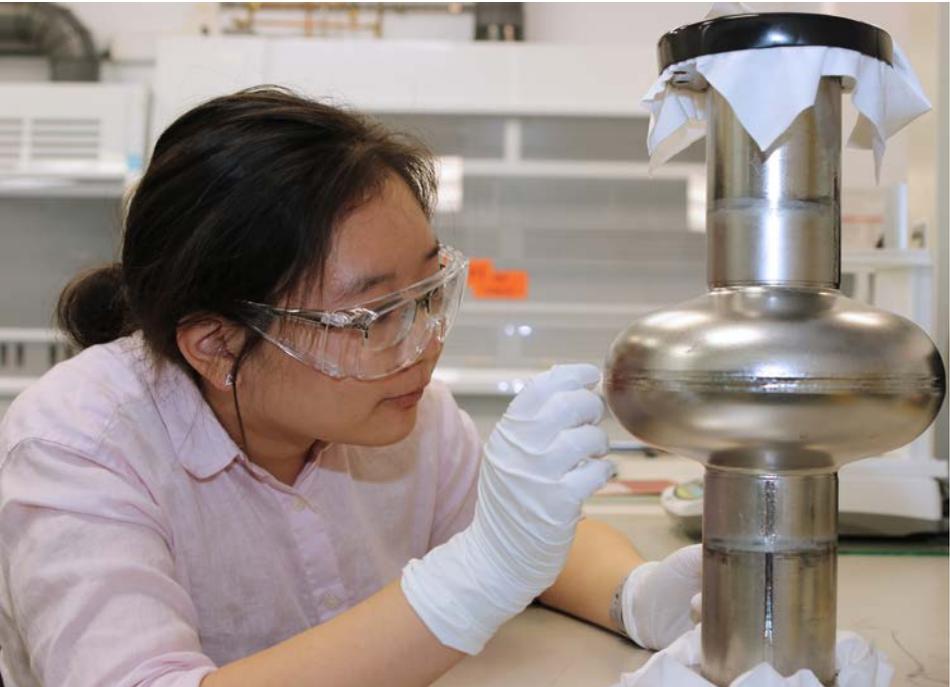
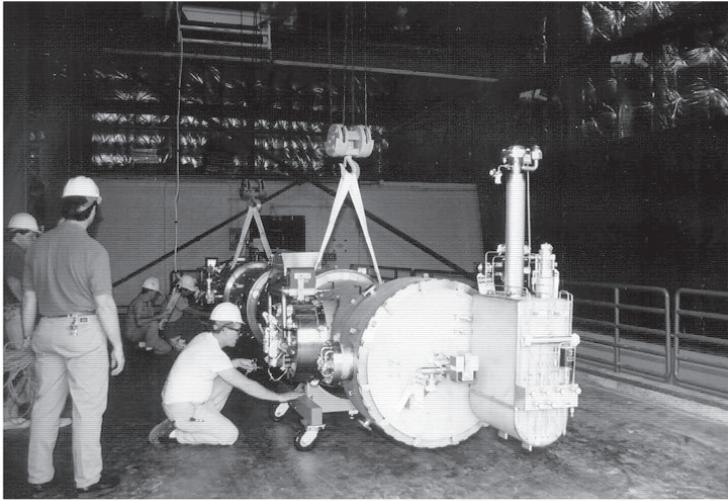


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In 1990, we installed the first cryomodule in our Continuous Electron Beam Accelerator Facility (CEBAF). Five years later, experiments began. In the quarter century since, we've conducted hundreds of experiments, deepening our knowledge of the world around us and transferring technologies that benefit us all in our day-to-day lives.

And we're just getting started.

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WELCOME

Welcome to Thomas Jefferson National Accelerator Facility, a U.S. Department of Energy Office of Science national laboratory. The lab's primary mission is to enable basic research for building a comprehensive understanding of the atom's nucleus by scientists and students worldwide. In addition, the laboratory capitalizes on its unique technologies and expertise to perform advanced computing and applied research with industry and university partners.

Nearly 1,700 scientific Users from 278 institutions in 37 countries flock to Jefferson Lab to conduct their research with the lab's unique and state-of-the-art facilities, including the Continuous Electron Beam Accelerator Facility. Scientists from 122 institutions across 31 states call Jefferson Lab their scientific home. Jefferson Science Associates, LLC, created by Southeastern Universities Research Association and PAE, manages and operates the lab for DOE.

At Jefferson Lab, the health

and safety of employees, Users, contractors, visitors and the general public is our highest priority. In concert with federal and state regulations — and based on years of experience and benchmarking — the lab has established rules and procedures that protect everyone's health and safety. All staff, Users and contractors receive training to ensure they know and follow the lab's environmental, safety and health policies and procedures.

We provide this guide to help you become familiar with the lab and your responsibilities here, whether you're a visitor or new employee, User or contractor. If you have additional questions after reviewing this guide, please consult your manager, escort or other point of contact here at the lab.

We want to ensure that your time at Jefferson Lab is enjoyable, productive and safe!



Jefferson Lab's accelerator site



RESPONSIBILITIES IN GENERAL

- Conduct **only** those activities and access only those areas approved for your visit or place of work.
- Follow **all** the instructions of your host or escort, manager or trainer. Request help if you have questions. Seek clarification of policies and practices.
- Determine the location of fire exits in every building you access.
- Promptly report to your manager **any** action or suspected acts of intentional damage, theft, misuse of government property, or other security or safety issues. Alert security too if necessary.
- Do **not** remove equipment, tools or other artifacts, and do not disturb wildlife or pick flowers.
- Use established walkways and, on stairways, use handrails.
- Do **not** bring pets or animals to the lab, except for service animals (such as guide dogs).
- Do not smoke in any Jefferson Lab building, facility or vehicle. Smoking is permitted **only** in designated areas.
- Dispose of litter, including cigarettes, properly.
- Act appropriately and respect the rights of others.

COMMUNITY STANDARDS

- Everyone is expected to embody the values of professionalism, respect and diversity.
- Behaviors not aligned with the lab's policies will not be tolerated.
- Failure to adhere to these Community Standards may result in you being barred from further lab events, suspended from site access including housing at the SURA Residence Facility, and/or removed from the site.

REPORT AN INCIDENT

If you or someone else feels uncomfortable in the workplace or believe you are being subjected to a hostile or harassing environment, or if you have any other related concerns, please contact the Jefferson Lab Ethics Officer, Rhonda Barbosa, immediately at rbarbosa@jlab.org or via the lab's Ethics Hotline at <http://www.jsaecp.ethicspoint.com>. Alternately, you may contact the Diversity and Inclusion Council at dcouncil@jlab.org.

COMPUTERS, WI-FI, ETC...

- Access a Jefferson Lab computer only if it has been assigned to you. Computers for general use are located on the second floor atrium at CEBAF Center.
- Wi-Fi service for visitors is available onsite. Passwords may be obtained at the front desk at CEBAF Center.
- No government-owned property or material may

be taken off-site without an approved property pass.

- Keep work areas and equipment in a clean and orderly condition.



PROHIBITED ARTICLES

Weapons, explosives or other dangerous instruments or materials likely to produce substantial injury or damage to persons or property are **prohibited**. Only law enforcement officials are permitted to bring or carry firearms at Jefferson Lab.

The following are also prohibited:

- Open containers of alcoholic beverages.
- Controlled substances, illegal drugs and associated paraphernalia.
- Other items prohibited by law.

VEHICLES

- You **must** have a valid driver's license, vehicle registration, insurance and vehicle safety inspection to drive on Jefferson Lab's campus.
- Follow all traffic signs when driving and park only in designated areas.
- The passing of **any** vehicle is prohibited.
- Obey posted speed limits.
- **Always** use seatbelts when driving or riding in vehicles at Jefferson Lab.
- Visitor parking spaces are for visitors **only**. No one (Users, staff, contractors, etc.) with a Jefferson Lab badge is allowed to park in visitor spaces.
- Handicap permits are required to park in handicap spaces.
- Note: Family members are no longer permitted access to the accelerator site to drop off and pick up employees inside the fence.

ACCESS: SECURITY AND SAFETY AT JEFFERSON LAB

LAB BADGES

- A Jefferson Lab ID/access badge is **required** to enter a Jefferson Lab facility without an escort.

- A Jefferson Lab ID/access badge allows you access to **only** those areas to which you have been assigned or for which you have received training.

- To receive a Jefferson Lab badge, you must complete the required training and have your citizenship or immigration document validated.

- If issued a badge, **you** are responsible to protect it and comply with all lab rules.

- Keep your badge with you at all times while on-site and present it when requested.

- Report lost or stolen badges to your host, escort or sponsor.

- Do not allow people you do not know to enter Jefferson Lab facilities. "Piggybacking" (letting someone without a badge walk in with you after you swipe your badge) is **not** permitted.

- If you are hosting or escorting a visitor who lacks a Jefferson Lab badge, you must remain with that visitor at all times. Some visitors to Jefferson Lab require approval from DOE before entering lab property. These include individuals who are neither U.S. nor naturalized citizens. That also includes those who were born in or are representatives of certain foreign countries. See <https://www.jlab.org/finance/travel/foreign> for that list of countries, as well as the latest information on travel restrictions.



- Only JSA employees can escort non-employees, including Users who do not currently have unescorted accelerator site access privileges, inside the fence of the accelerator site.

Registered Users without current badge access may be granted unescorted access to the accelerator site for a limited time (for example, over a weekend) with **advance** coordination between the JSA Host and the JSA Security Office. In such cases, non-U.S. citizens must have a valid, government-issued photo ID and passport for security staff verification at the accelerator gate.

- The JSA host retains all responsibility for oversight and control of Users or visitors granted access to the accelerator site without safety training.

Call 269-5822 (5822 from a Jefferson Lab extension) for non-emergency assistance.

FOREIGN NATIONALS

A non-U.S. citizen planning to conduct any type of work or receive any form of compensation must be registered before entering

the country. The registration is initiated by the visitor's Jefferson Lab host or sponsor, leading to the development of a "business invitation letter." Foreign visitors and researchers need the letter in order to get a business visa so they can work at the lab. For first-time visits, this process can take weeks to several months.

For example, submittal of an electronic-access-request registration form is required at least seven days before one's on-site arrival date.

Please contact the JLab Registration/International Services office for details, or visit its webpage at <http://www.jlab.org/hr/jris/>.

BUILDINGS: GENERAL ACCESS AND PROPERTY PROTECTION AREAS

Moving around the lab campus requires that you comply with all safety requirements, posted safety notices and instructions you have been provided.

Complete all required training if you will be entering a facility without an escort, or if you will be involved in an activity requiring special training. Your

host or escort will inform you if you need training.

GENERAL ACCESS AREAS

Areas in some buildings are designated as general access areas, meaning they are accessible to all personnel and the public (except on federal holidays and during lab shutdown periods). These include the following:

- **CEBAF Center** (Bldg. 12), which is the lab's main administration building, has an atrium, cafeteria and auditorium that are open to the lab community 8 a.m. to 5 p.m. on Monday through Friday.
- The **SSC** (Bldg. 28) and ARC buildings are open to the invited public through their main lobby doors from 8 a.m. to 5 p.m. on Monday through Friday. The city of Newport News owns the **ARC building**, and Jefferson Lab manages it.

All campus entry roads are open 6:30 a.m. to 6:30 p.m., Monday through Friday. Vehicle entrances and exits are limited during the remaining hours, as well as during weekends and holidays.



All remaining Jefferson Lab facilities and areas are considered property protection areas.

PROPERTY PROTECTION AREAS

You are required to complete the necessary training to access these areas (e.g., the experimental halls), or be escorted by one who has.

Students are required to complete the necessary training to access these areas.

- In some areas, long pants and flat or low-heeled, closed-toe shoes are required. Your host or escort or the training you receive will let you know when you are entering one of these areas.
- Some areas require personal protective equipment, such as hard hats, safety glasses and hearing protection. Visitors will be provided personal protective equipment and

may even receive safety training or a briefing if visiting an area that requires such protection.

FOR YOUR SAFETY

- Inform your manager, host or escort of any medical conditions or limitations that may prevent you from performing your work safely, or from entering a restricted area, such as one with strong magnetic fields or radiofrequency (microwave) radiation.
- Stop work or whatever you are doing immediately when you identify a potential hazard or problem, or when directed to do so by your manager, escort or another Jefferson Lab employee.
- Immediately report any injury, illness, potential exposure, spill or non-routine release of a hazardous material. Request assistance from your supervisor, escort or nearest employee.

If you need additional

assistance, call Jefferson Lab security at 757-269-5822, or dial 5822 if using a lab phone.

IN AN EMERGENCY

If you are involved in (or witness) a medical or other type of emergency, call 9-1-1 **immediately** to report it. Then call Jefferson Lab security at 757-269-5822 (x5822 if using a lab phone) to let them know you called 9-1-1. If you have an accident/injury, no matter how small, during normal business hours (Mon - Fri, 8 a.m. - 5 p.m.):

- Report it immediately to your supervisor, escort or nearest lab employee.
- Report it as well to Occupational Medicine at 757-269-7539 (x7539) or by pager at 757-584-7539.

If a non-9-1-1 accident occurs after normal business hours, and you feel that you need medical care, head to an emergency room (see sidebar below) or an urgent care facility in your area.

24-HOUR EMERGENCY CARE	Port Warwick II Sentara Emergency Center 11803 Jefferson Avenue, Newport News, VA 23606 757-736-9800
	Riverside Hospital Emergency Room 500 J. Clyde Morris Blvd., Newport News, VA 23601 757-594-3080
	Mary Immaculate Hospital Emergency Room 2 Bernardine Dr., Newport News, VA 23602 757-886-6000

RADIOLOGICAL SAFETY

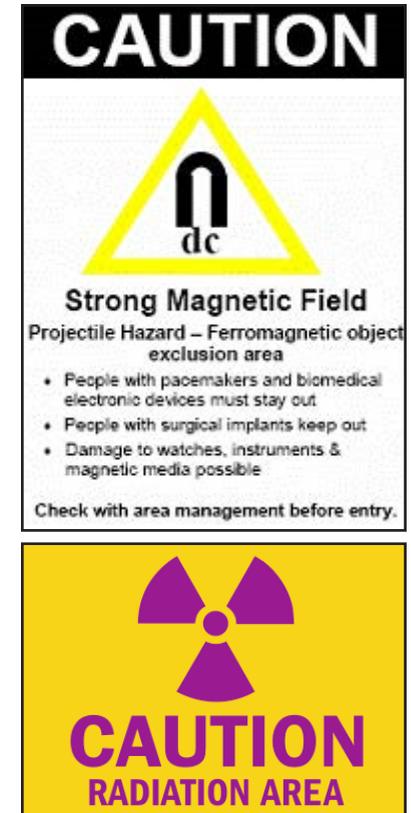
UNDERSTANDING RADIATION EXPOSURE

Most areas you visit at Jefferson Lab will not expose you to radiation above normal background levels. However, you may be exposed to radiation if you enter a radiologically controlled area or handle radioactive material. Your supervisor or escort will inform you if you will be entering an RCA (as will any training you're required to take about those areas).

"Rem" is the measurement of the relative risk caused by exposure to a certain amount of radiation. In daily life, we're exposed to sources of radiation, even natural ones (see table on next page).

The Department of Energy has set the whole body dose for workers at 5 rem/year, while Jefferson Lab limits whole body doses to 1 rem/year. The radiation dose limit for visitors and the public is 100 mrem/year (1,000 millirem or "mrem" equals 1 rem).

The lab strives to keep radiation doses well below these limits through the



concept of **ALARA**: As Low As Reasonably Achievable.

The main elements of ALARA are as follows:

- Reduce time near a radiological source.
- Increase the distance from a radiological source.
- Increase the shielding between people and a

RADIATION SOURCES		
Source/Activity	Average Dose/Year (or as noted)	Average Dose/Year (or as noted)
	rem/mrem*	Sv/mSv*
5-hour jet ride	3 mrem/5 hours	.03 mSv
Chest X-ray	8 mrem	08 mSv
Soil	29 mrem	.029 mSv
Internal to our body	40 mrem	.04 mSv
Radon gas	200 mrem	2 mSv
Per CT Scan	1000 mrem	10 mSv
Smoking 20 cigarettes/day	5300 mrem	53 mSv

* The unit for measuring dose in a person is the rem. Since the rem is a large unit, radiation dose is usually recorded in thousandths of a rem, or millirem (mrem). The sievert (Sv) is the international unit for dose equivalent radiation. The conversion rate is 1 Sv = 100 rem.

radiological source.

To work in or visit an RCA without an escort, you must complete a training program and pass a test.

Never take food, drink or smoking materials into an RCA. Wash your hands after visiting such an area, especially before eating.

KNOWING CEBAF RADIATION POTENTIAL

The lab's electron beam accelerator has the potential to produce high levels of radiation when the beam

is running. The beam can produce residual radioactivity (i.e., ionizing radiation) in systems and structures surrounding the beam enclosure.

Non-accelerator sources of radiation also are present, but these sources don't add significantly to personnel exposure.

No one is allowed in the accelerator enclosure when the beam is running. No radiation is produced when the beam is off.

WEARING A DOSIMETER

A dosimeter is a device that monitors the amount of external radiation to which a person is exposed. At Jefferson Lab, most employees do not receive a measurable occupational dose of radiation and therefore don't require dosimeters. Those working in RCAs wear them to measure their dose.

Visitors to the lab are not expected to be exposed to any measurable radiation. A dosimeter will be issued to your escort, if you will be entering an area where dosimeters are required — or

if you have the potential to receive a dose that requires dosimetry. If you are given a dosimeter, you are being monitored for an official record. You also will be instructed how to wear and care for it.

INFORMING PREGNANT VISITORS

If you are pregnant and have any questions or concerns regarding radiation exposure, speak with your host or escort. DOE limits radiation workers who are pregnant to 500 millirem (.5 rem) during the entire gestation period.

ENVIRONMENTAL STEWARDSHIP

Jefferson Lab is committed to protecting the environment. It is lab policy to comply with all environmental regulations and laws. It is also the lab's policy to efficiently use energy resources, and to comply with all energy conservation legislation, executive orders and programs regarding federally owned or funded facilities.

The lab's energy management program continually invests

in more efficient technology and equipment, and identifies best-operation practices to conserve energy and water resources.





CULTURE (FOOD, EVENTS, ETC.)

The community at Jefferson Lab offers tasty dining on site during business hours, at the Quark Café, located in the CEBAF Center. Other delicious dining is located adjacent to the lab, starting with Tech Center, just off of Hogan Drive.

On-site events such as the Run-A-Round in the spring and Oktoberfest in the

fall, run by the Jefferson Lab Activities Group (JAG), further foster a thriving lab community.

Holiday parties for adults and children alike, costume and door decorating contests and more hallmark the JAG's volunteer work to enhance employee morale through such activities. To learn more, check out https://www.jlab.org/jag_about!

TOURS

The lab's Communications Office schedules tours for groups of 5 to 20 people. Contact them at tours@jlab.org if you are interested in scheduling a tour. The assigned Tour Coordinator must approve any change in the number of people participating in a tour at

least 24 hours in advance of a scheduled tour.

Tours of the accelerator, experimental halls and Low Energy Recirculating Facility (LERF) are based on the availability of those areas.

Windshield tours of the accelerator site are possible throughout the year.

The accelerator does not have an elevator. Individuals taking a tour of the accelerator must be able to walk down — and back up — five flights of stairs.

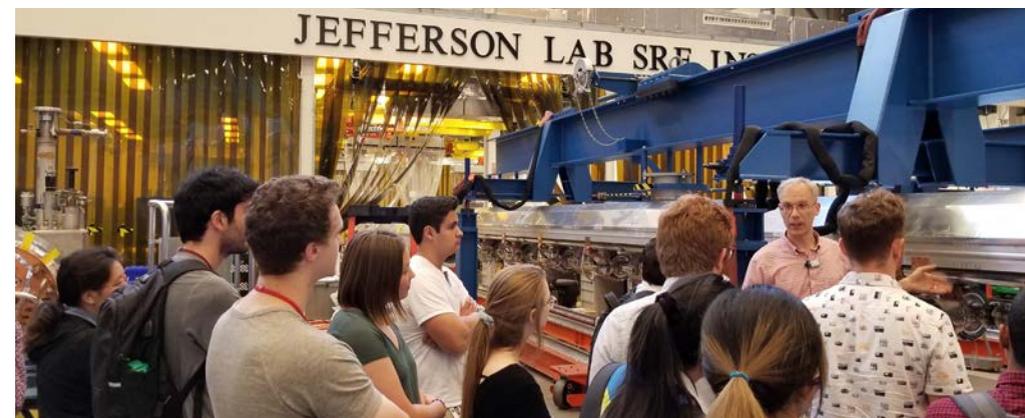
A tour of Jefferson Lab generally requires 90 minutes to 2 hours to complete. All visitors taking a tour are required to carry photo ID; be 18 years or older; wear low-heeled, closed-toe shoes and long pants; and provide proof of citizenship. Tour participants are required to arrive 15 minutes before a tour begins — to receive a safety briefing and to complete an information sheet. That sheet asks for name, countries of birth and citizenship, and address.

DELAYED OPENING/CLOSING

On occasion, Jefferson Lab closes or delays opening for severe weather events. If your visit coincides with an event that could impact lab operations, call your sponsor. If you can't reach your sponsor, call the lab's main number (757-269-7100), or lab status line (757-234-6236), or check the main webpage (www.jlab.org) for information on the lab's status.

International visitors must carry their passports or visas with them.

Open House is the only time when visitors under 18 years of age can tour the lab. Jefferson Lab typically offers one for the general public every other year.



JEFFERSON LAB SITE MAP

① Applied Research Center

The ARC is a seven-story office and laboratory building that Newport News owns and Jefferson Lab operates.

② Support Service Center

The SSC is home to the lab's human resources, finance, procurement, facilities management, and science education departments. International services and badging for staff, Users and students are also located here.

③ SURA Residence Facility

Researchers and visitors may rent rooms at the Residence Facility, which is operated by Southeastern Universities Research Association.

④ CEBAF Center

CEBAF Center is Jefferson Lab's main administration building. It provides conference, meeting and office space. A cafeteria serving breakfast and lunch is open Monday through Friday from 7 a.m. - 2 p.m. The center is named after the Continuous Electron Beam Accelerator Facility, the lab's original name.

⑤ Experimental Equipment Lab

The EEL is where specialized equipment for experiments is assembled and tested.

⑥ Technology and Engineering Development Building

The so-called TED Building is a state-of-the-art facility where research in nuclear physics, accelerator science, applied nuclear science and technology, and advanced instrumentation is conducted.

⑦ Test Lab

The Test Lab is home to Jefferson Lab's Superconducting Radiofrequency Institute, a world leader in SRF accelerator technology and capabilities.

⑧ Environmental, Safety, Health and Quality Building

The lab's ESH&Q staff work out of this building, which includes the Radiation Control Department, where staff, Users and others needing access to radiologically controlled areas go to obtain temporary or permanent dosimetry.

⑨ Guard House

The lab's security staff is based here. It is also the main access point to the accelerator and the experimental halls.

⑩ Hall A

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

⑪ Hall B

Hall B houses the CEBAF Large Acceptance Spectrometer or CLAS12, brought online in 2017. Layers of spectrometers surround the target assembly, allowing researchers to measure many reactions simultaneously over a broad range of angles.

⑫ Hall C

Hall C is equipped with the Super High Momentum Spectrometer, also brought online in 2017, and the existing HMS. It is also used to take precise measurements of the inner structure of protons and nuclei, using the maximum available beam energy and current.

⑬ Counting House

This building houses the control rooms for Halls A, B and C, and includes meeting and office space on its second floor.

⑭ Machine Control Center

The MCC is the hub for operating the accelerator. From here, more than 250,000 data points are monitored continuously when the machine is in operation.

⑮ Central Helium Liquefier

The CHL uses liquid helium, cooled to -456° F, to refrigerate the superconducting niobium cavities used to accelerate CEBAF's electron beam.

⑯ Low Energy Recirculator Facility

The LERF is a multi-purpose, stand-alone laser- and electron-beam research facility and accelerator component test bed.

⑰ Hall D

Hall D is configured with a superconducting solenoid magnet and associated detector systems, used primarily for the GlueX experimental program, to study the strong force that binds quarks together.

KEY PHONE NUMBERS AND EMAIL ADDRESSES

Note: If calling from a lab phone, all 269- numbers below can be dialed using the last four digits alone.

Copy Center	757-269-7666	n/a
Diversity and Inclusion	757-269-5991	dcouncil@jlab.org
Event Services (Meeting Rooms)	757-269-6368	eventservices@jlab.org
First Aid	757-269-7539	n/a
IT Division Help Desk (Guest Wi-Fi Passwords)	757-269-7155	helpdesk@jlab.org
Lab Status Information	757-234-6236	n/a
Main Number	757-269-7100	jlabinfo@jlab.org
Medical Services	757-269-7539	medserv@jlab.org
Mother's Room keys	757-269-7628	
Radiation Control (Practical/Dosimeter)	757-269-7219	radcon_train@jlab.org
Security (Emergency: call 9-1-1 then call Security)	757-269-5822	FSO@jlab.org
SSC Receptionist/JRIS (Foreign Nationals)	757-269-7598	jrisc@jlab.org
SURA Residence Facility	757-223-1167	resfac@sura.org
Tours	757-269-7617	tours@jlab.org
User Liaison/Student Affairs	757-269-6388	userliaison@jlab.org



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Jefferson Science Associates, LLC, for the
U.S. Department of Energy's Office of Science

