

# **Career Opportunities at Jefferson Lab**

You might be interested to know more about high-technology jobs with scientific organizations like Jefferson Lab.

These jobs can be very rewarding in job satisfaction, pay and benefits. In the years ahead, many more well trained people will be needed for technical and scientific jobs. These people will earn more dollars per hour than they would in minimum wage jobs or many nontechnical jobs.

Several hundred people work at Jefferson Lab. About 650 are Lab employees and many more are visiting scientists. People working at Jefferson Lab got their technical or scientific training, education and experience in many different ways. But they all have one thing in common; they all studied math and science in school.

Early in their careers, many found jobs that gave them valuable experience. They knew that a person's first job often isn't what one ends up doing later on. Some Lab employees started out doing simple jobs for little pay. They learned more and more about the things they worked with and gradually gained technical experience. Often they continued their education after work by going to college or by taking special classes.

Formal education is important for some jobs. A scientist, for instance, almost always earns both a four-year college degree and a doctorate, or Ph.D., degree. A Ph.D. can take several years to earn. You have to do research to find new knowledge that no one already knew.

Most other technical and scientific professionals have four-year degrees and many have master's degrees. A master's degree may take an additional year or two to earn.

Still other technical professionals and highly skilled workers have community college two-year associate degrees or other special training. Most such workers at Jefferson Lab also have a good deal of practical work experience. Even as early as high school, they may have studied computers, electronics, machine tools or other technical equipment. Many of them take more courses from time to time after they 'finish' school to improve or update their skills and knowledge. They know they must always be learning if they want to be successful.

In addition to scientific and technical education, training and experience, employees of organizations like Jefferson Lab need to be able to read and write effectively, communicate well and work cooperatively with others.

They also need to be able to adapt old knowledge and skills to new job demands. Many Jefferson Lab employees had to learn on the job. They were able to do so because they prepared themselves to be flexible and to take on new kinds of technical challenges. Often, these challenges make their work interesting and exciting.

Any large organization needs accountants, bookkeepers, maintenance workers, secretaries and others who help keep the organization going. There are many nonscientific jobs at Jefferson Lab. These workers need good math, reading, writing, speaking and teamwork skills and a general appreciation of science to succeed at Jefferson Lab.

Here are some examples of technical and scientific jobs at Jefferson Lab:

### **Drafters and Designers**

Drafters and designers use computer equipment to make drawings of high-technology equipment and components. Some drafters learn their trade mainly through experience after they leave high school. But many, especially those who become designers, have a formal technical education from a two-year community college.

### **Engineers**

Mechanical, electrical, electronic and civil (construction) engineers are important technical managers and decision makers in an organization that builds and operates complex equipment. Often, an engineer gets to build something no one has ever built. At a minimum, an engineer usually has an engineering degree from a four-year college or university.

### **Electricians**

Much of the equipment at Jefferson Lab is electrical. Although engineers and physicists may be responsible for the equipment, trained electricians install, operate and maintain it. A typical electrician might have a two-year degree, lots of practical experience or both.

### **Physicists**

Nuclear physicists study the atom's nucleus. An important job for them is preparing and operating the equipment used in accelerator experiments. Accelerator physicists design, build and operate the accelerator. Physicists have Ph.D. degrees.

### **Health Physicists and Safety and Environmental Specialists**

Operating an accelerator requires good safety. Health physicists and safety and environmental specialists make sure that the people who operate the machine are protected from the dangers that can be involved if people are not careful. They also make sure the operation of Jefferson Lab does not harm the public and the environment. Formal education for these kinds of jobs can range through and beyond a four-year college degree.

### **Electronics and Mechanical Technicians**

Skilled technicians build, operate and maintain equipment. Many are graduates of apprentice schools or special programs at community colleges. Often they have substantial college-level education.

### **Computer Systems Technicians and Programmers**

The scientists use computers to do much of their work. Computer systems technicians make sure all the computer hardware runs smoothly and programmers help the scientists use computers. Most computer workers have college education through the four-year level and beyond.