

## Jefferson Lab Weekly Briefs

August 1, 2007

### Walking Path Closing

The walking path from the intersection of Canon Blvd. and CEBAF Blvd. to the Residence Facility will be closed beginning Friday (Aug. 3) at 5 p.m. The path is being closed for the construction of a storm water retention pond, and it will remain closed until construction is complete.

### 12 GeV Upgrade

A critical requirement for operating large acceptance detectors with fixed-target electron beam experiments is to shield the detector from the low-energy electrons elastically scattered from the target. The technical solution to this problem depends uniquely on the characteristics of the detector being shielded, and it requires extensive and detailed simulations. This issue is being studied for CLAS12 as part of an ongoing 12 GeV R&D program in a collaboration between JLab and the Russian institute ITEP. The studies to date indicate that a combination of a high-field solenoid magnet, as planned for CLAS12, and a precisely shaped dense metal absorber will adequately shield the critical first layer of drift chambers from this background. In addition, the studies have determined the optimal location and geometry for the central tracking detector, which is very close to the beamline. Studies are ongoing for several other beamline elements.

### Physics

Work continues for the setup of the GEP-II/GEp-2gamma experiments in Hall C. The frame for the Focal Plane Polarimeter has been installed in the High Momentum Spectrometer hut.

### JLab's Safety Numbers (August 1, 2007)

270 Days since Last Recordable Accident (new JLab Record: 270) Congratulations, everyone!  
270 Days since Last Lost Workday Accident (JLab record: 455)

### Environment, Safety, Health & Quality

Several area house fires in the past year highlight the problems with storing, using and handling gasoline at home. The National Fire Protection Association (NFPA) offers the following tips.

- Use gasoline only as motor fuel, never as a stain remover or for cleaning oily/greasy parts or equipment;
- Turn off equipment and let it cool completely before refueling;
- Wipe up all spills immediately;
- Never use gasoline in any car repair activity that is not approved in the owner's manual or shop manual for that model vehicle;
- Store gasoline only in clearly marked containers approved for flammable liquids and never in glass jars or open containers;
- Never use gasoline to start a charcoal fire, and keep grills at least 10 feet from the house or anything else that could ignite, such as a deck. Visit the [NFPA Web site](#) for additional information on gasoline use and handling information.

• **Quality Assurance Plan** - The new JLab Quality Assurance Plan (QAP) has been approved and is now in effect Lab-wide. This plan was developed using ISO 9001-2000, "Quality Management System – Requirements" and associated DOE QA guidance. The plan provides a framework for continuous improvement in all areas of JLab work, including research, business, and infrastructure activities. The QAP can be found on the [Quality Assurance/Continuous Improvement Web page](#).

### Accelerator

Maintenance and repair efforts all over the accelerator site continued at a very busy, but safe, pace. Marked accomplishments included continuing installation of the load-lock gun in the injector. The installation work went very smoothly, with follow-up maintenance work going very well also. The Cryogenics group successfully accomplished the task of bringing

the Central Helium Liquefier to 4 Kelvin; this will reduce power costs during the down period. Cryomodule replacement work, NL04 and SL09, has gone very well. In the meantime, NL11 is being prepped to be removed from the beamline ahead of schedule. On July 31, a test was performed of the emergency generator, automatic power transfer switches and the emergency power loop. The test went very well, with only a few minor items, such as specific building lights and vacuum power carts, needing to be added to the system.

### **Free-Electron Laser (FEL)**

Good progress was made on the gun and optical transport systems and on the new Laser Personnel Safety System. The CEBAF Polarized Source group measured the out-gassing rate of the Gun Test Stand gun vacuum chamber after the vacuum firing process. It is almost an order of magnitude better than anything achieved so far at their lab. This result validates the new vacuum firing procedure and we expect better vacuum conditions in the GTS gun than those observed in the FEL gun.

### **Theory Center**

A holographic dual model of QCD with linear confinement behavior has been used by Theory Center members to develop a formalism for calculating hadronic observables (arXiv:0706.1543v2 [hep-ph]). For the rho-meson, the basic elastic form factor is found to exhibit perfect vector meson dominance, given by the rho-pole contribution alone. The electric radius of the rho-meson is calculated to be  $0.655 \text{ fm}^2$ , which is larger than in the case of the hard-wall cutoff considered in earlier work.

### **Announcements**

• **Vendor to operate Stockroom.** In the past, the Lab has operated an in-house stockroom, which maintained an inventory of DOE-funded parts and supplies that was available to both employees and users. During the next fiscal year, the technical stockroom will be phased out and replaced by an onsite vendor store. [Click here](#) for more information about how the stockroom is changing.

• **Summer students show their stuff.** Don't miss the Science Education Summer Poster Session this Friday (Aug. 3) 11:30 a.m.–1:30 p.m. in the CEBAF Center lobby. The session will feature posters by the participants of the Science Undergraduate Laboratory Internship, the High School Summer Honors Program (HSSHP), and the Academies Creating Teacher Scientists (DOE ACTS) programs.

### **DOE unveils accelerators search feature.**

DOE's Office of Scientific and Technical Information recently launched a new Web tool for researchers: the [DOE Science Accelerator Web site](#), a one-stop search for full-text technical reports, e-prints, science conference papers and proceedings, legacy research results, R&D project summaries and other resources.

• **Before you connect/move a device to JLab's secure network...** Before plugging a new device into the network or moving a device from one network jack to another, be sure to submit a network service request from the [Computer Center Networks page](#). The Helpdesk will assist you in properly connecting your device to the network. Due to new security protocols for the Lab's networks, attempting to plug in a new device without notice will automatically disable the network jack.

• **TIAA-CREF individual counseling session dates set for September/October.** This is an opportunity to discuss the current status of your account, investment strategy and retirement goals. The dates are: Sept. 28 and Oct. 18 & 19. To sign up for an appointment, go to <http://www.tiaa-cref.org/>, click on Meetings & Counseling and follow the menu. The sessions will be held in the VARC.

### **JLab Calendar of Events**

Aug. 3: Summer Poster Session  
Aug. 6-10: PAC 32  
Sept. 3: Labor Day holiday  
Sept. 7: United Way Day of Caring  
Sept. 13: JSA's Electronic Commerce Small Business Vendor Show