Saturday Morning Physics Tour/Task Descriptions

Wilson Hall 15th Floor (WH15):

Accompany the students up to the 15th floor. Use both banks of elevators and don't crowd them too much. Show them the map of the lab and the various lab sites. These include a panorama of the Tevatron, the Main Injector, the fixed target experimental areas, the Fermilab Test Beam Facility, the SiDet building, the NuMI target building (MI65), etc. Explain some of the detector component exhibits there. Explain the functions of each part of the accelerator complex. (If there are 2 tour groups, both assigned to WH15, one group will need to start at the opposite end and work backwards.) Discuss the exhibits that are on the east side.

Accelerators (ACC):

Make sure you attend a training session with a designated accelerator expert beforehand, to get an overview of the accelerator gallery (contact Roger Dixon, or Erik Ramberg for names of experts). Meet students at the top of the south stairs in the cafeteria and lead them to the start of the gallery, i.e. at the Cockcroft-Walton generator room. Contrast the old injector with the new one. Go down the Linac gallery, point out the different components e.g. the klystrons, etc. Stop at the neutron therapy facility and explain that. Go left at the Main Injector display and proceed to the main control room. Explain the workings of the main control room, solicit help from a free operator if you are not sure of the operations at that time. (If there are 2 tour groups, both assigned to Accelerators, then one group will need to start at the opposite end and work backwards.)

DØ:

Make sure students have closed toe shoes and are 14 or older. Arrange for rides out to DØ. Meet students at the north entrance of the assembly building. A DØ + Tevatron tour guide has been assigned. Accompany the students into the accessible areas of the D∅ interaction region for the tour.

Grid Computing Center (GCC):

Make sure you attend a training session with a designated GCC expert beforehand, to get an overview of the tour accessible areas, the subject matter and goals of the GCC (contact Suzanne Weber or Erik Ramberg for names of experts). Before you come to One West, check to make sure that you can enter the GCC facility. Meet students at the north east entrance to the GCC (near Wideband Hall and buffalo farm) and explain the workings and goals of the GCC. Then proceed inside to view the rooms accessible for the tour. Be sure to sign in the group on the clipboard. Rooms include: tape robots, networking, power battery backup, 3 rooms of processors. As a reminder; no one may enter the tape room. It is considered a "clean room".

ASTA:

Make sure students have closed toe shoes. Arrange for rides out to the ASTA site, right across from SiDet. You will meet a guide at the south door of the NML building. Accompany tour to make sure students stay safe.

Neutrino:

Make sure students have closed toe shoes. Make sure you attend a training session with a designated neutrino expert beforehand, to get an overview of the neutrino detector areas (contact Erik Ramberg for names of experts). Before you come to One West, check to make sure that you can enter the MINOS and NOυA surface buildings. Meet students at the entrance to the MINOS surface building. Proceed inside and explain the displays of the MINOS and MINERνA detector planes inside the building. Explain the NuMI beam line, concept of neutrino oscillation and cross-section measurements using the schematics near the displays in the MINOS building. Mention that the NOυA near detector is also stationed in the underground cavern. You can

compare and contrast the goals of the MINOS and NOυA experiments. Show students the shaft and explain that it is used for transporting detector planes more than 350 feet underground into the detector cavern.

After touring the MINOS surface building, bring students to the NOυA surface building. Only 10 students at a time should be allowed to go up the stairs for viewing the detector. Explain the workings and physics goals of the NOυA experiment.

SiDet Building:

Make sure students have closed toe shoes. Make sure you attend a training session with a designated SiDet expert beforehand, to get an overview of the tour accessible areas and the research done at SiDet (contact Suzanne Weber or Erik Ramberg for names of experts). Before you come to One West, check to make sure that you can enter the SiDet facility. Meet students at the entrance to Lab C and describe the research done there. Lead the tour group down the hall and describe to them the makings of silicon detectors and their components with the help of the exhibits there. Proceed to the designated clean rooms, e.g. the one with the Coordinate Measuring Machines. Explain about the concepts of CCDs and why we use them in physics.

Technical Division Magnet Facility (Tech. Div.):

Make sure students have closed toe shoes. Meet students at the West entrance of the central industrial building (the one covered with ivy). Contact the designated tour guide who will take over and give the tour. Accompany tour group inside the building. Make sure students and tour areas stay safe.

Organizers

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