

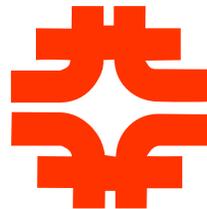
US LARP

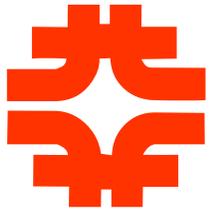
(LHC Accelerator Research Program)

John Marriner

BD/Dept Heads Meeting

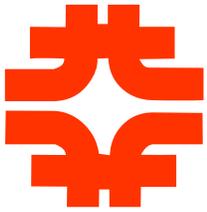
September 25, 2003





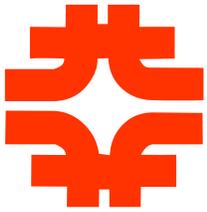
Motivation for working on LHC

- LHC is a large part of the future of U.S. HEP.
 - Future HEP accelerator projects at FNAL and even anywhere in the US are iffy to non-existent.
 - We need to keep our design and commissioning skills sharp.
 - LHC is not a replacement for a US-based project, but it may open both doors and eyes.
- Broaden experience of FNAL beam physicists.
- Get better recognition for beam physics and technical innovations at FNAL and better name recognition for our scientists and engineers.



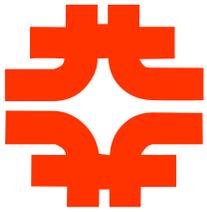
More motivations....

- Future accelerator projects are likely to be collaborative.
 - Forming effective collaborations is something that has to be learned
 - It is best to learn before the stakes get too high.
- There is money in LARP. We can participate or see it go to BNL and LBNL.
- Of course, as with any new activity, there will be some diversion of effort from Run II.



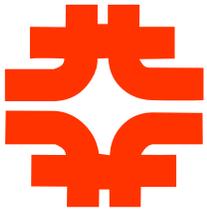
What is the LARP plan?

- US LARP is a 3 lab collaboration: BNL, FNAL, and LBNL.
- Expect modest effort at FNAL/BD in FY04 (about 100 k\$ worth), growing to (perhaps) 1500 k\$.
- Similar effort in FNAL/TD on magnet R&D.
- The plan is to work on instrumentation & beam physics.
 - Beam physics is focused on IR upgrade
 - Instrumentation is focused on tune measurement.



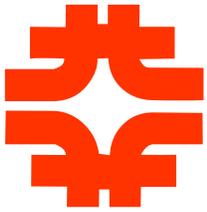
The Plan: Continued

- Expect major participation in LHC commissioning-1 U.S. LARP person per shift. Means 3-4 FNAL FTE's at CERN for about 2 years starting in 2007. Ramp up linearly from 0 to 3 in 2006 (prep for commissioning activities).
- Expect US commissioning to be tied to U.S. instruments, IR, special interests of participants, as well as general participation.
- Opportunities to get involved in pre-commissioning activities (e.g., tests at the SPS) in 2004.



Who from FNAL is involved?

- Jim Strait (US LARP leader)
- Tanaji Sen (FNAL Accelerator Physics/ Beam Dynamics)
- John Marriner (FNAL Accelerator Physics/ Instrumentation)



What do we need from FNAL/BD?

- An active, well supported group of 5 or more individuals with expertise in operations, beam physics, and instrument design, fabrication, and commissioning. I think most beam physicists would participate on their “research fraction.” Other staff would require a blessing from their supervisor.
- We especially need people with Run II experience to participate at ~10% of full time level.
- A graduate student or 0.5 FTE in BD/Instrumentation (paid with U.S. LARP funding).
- Overall, we are probably talking about an effort that is from 1 to 2 FTE's, but it might be more if this is more popular than I think.
- If we can't get a minimal group together, I think we should just default rather than turning in a poor performance.



What do I want from you?

- Time to talk at a BD Dept Heads Meeting (this talk).
- Time to talk at individual systems department meetings to recruit people.
- Support in the sense of management at all levels viewing LHC as a valid choice for research.