



Managed by Fermi Research Alliance, LLC for the U.S. Department of Energy Office of Science

PPD Status

Jonathan Lewis

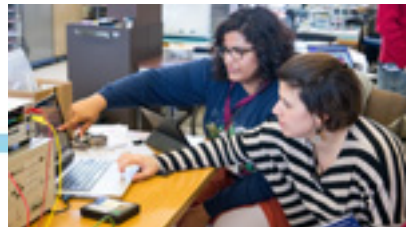
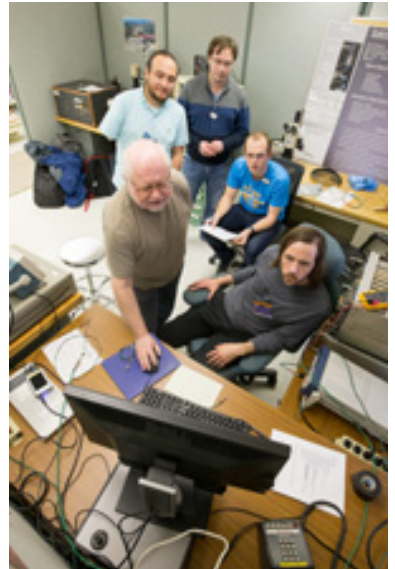
All Experimenters' Meeting

19 March 2018

EDIT School

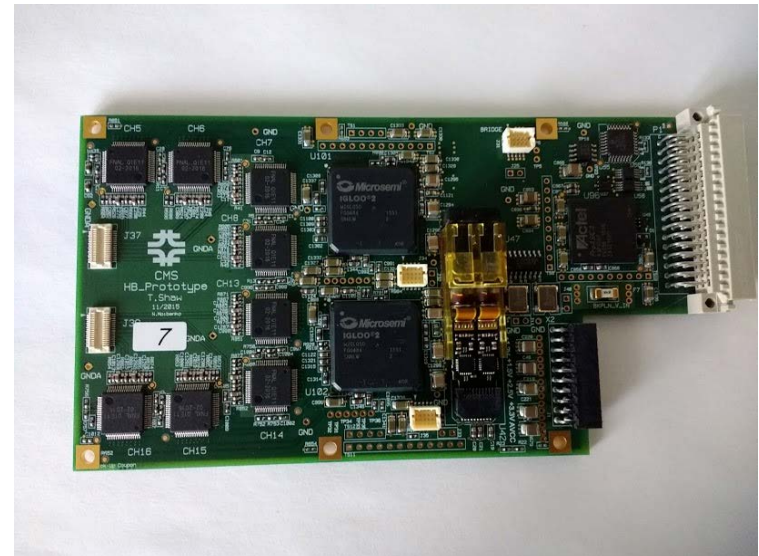
- Great success!
 - Fifty students from around the world
 - Studied various technologies and how they are instrumented into full-scale experiments.
 - Each day started off with an advanced lecture on some type of instrumentation.
 - Students broke into smaller groups where they obtained hands-on training for photodetection, silicon tracking, liquid noble gas and test beam.
 - Typical training was 6 hours a day, with one lecturer for every 3 students.
 - Many students claimed this was the best schooling they've ever had. The staff who participated in this school deserve the highest praise.

EDIT



CMS

- Science Results
 - Lots going on at Moriond right now - 12 plenary talks from CMS, another 10 with CMS results from ATLAS speakers
- Operations
 - HE electronics upgrade installed, detector buttoned up and running cosmics
 - No update on root cause of DCDC problems (localized to FEAST2 ASIC)
- Phase 1 Upgrade
 - Launching Production efforts to build quantity 870 16-channel front-end readout cards for CMS HCAL Barrel; uses QIE11 ASIC designed by EED ASIC group



- HL-LHC Upgrade
 - Assembled first electrical module with bump bonded HDIs for the 2S layers of the outer tracker
 - Completed profile measurements of several 2S-module wire bonding fixtures.

Mu2e - Solenoids

- Transport
 - Several members of the Mu2e Solenoid and Project Management teams visited ASG (Italy-Genoa) to talk about the TS fabrication program and schedule.
 - ASG sent the first production TS unit to Fermilab last week.
 - The unit has been unpacked and is being prepared for room temperature stretched wire magnetic field tests at IB2.



Mu2e - Solenoids

- Production and Detector solenoids
 - The PS/DS Model Coil insertion is scheduled to take place on March 22nd at General Atomics - Tupelo.
 - The DS8 faux-coil has been VPI'd, but there are voids in the epoxy that need to be repaired prior to machining.
 - The winding machine program/parameters for DS1 has been checked by TPA, the winding machine vendor, but GA has not yet set a date for the start of the DS1 winding.

Mu2e - Calorimeter

- Finished measuring the first batch of Mu2e crystals from St. Gobain.
- Crystal testing and characterization lab nearly ready for action at Lab A
 - Four ORC complete, one to go

Test Beam

- sPHENIX Silicon Strip Tracker (INTT) Test (T1439) and sPHENIX MAPS Vertex Detector (MVTX) (T1441) experiments have both finished taking beam. These tests are for the sPHENIX upgrade.
- T1429 (Performance Study of a planar GEM and MM detector with zigzag pad readout) has also finished data taking. This test was looking at the zigzag pad readout performance and is related to the sPHENIX upgrade
- T1044 (sPHENIX Calorimetry Tests) continues to test their EM and Hadronic calorimeters until March 27.

ASICs

- The Fermilab Invention Disclosure Committee elected pursuing FLORA project based patent as two patents (circuit and camera device)
- After 8 years, breakthrough in the ARM standard cells agreements. DOE agreed on liability and indemnification clauses included in the agreements.
 - Some other terms still need to be negotiated, but most likely the ASIC Group will be granted access.
- Letter of Compliance for getting TSMC devices at Fermilab cannot be signed in the form provided to us by CERN-IMEC Foundry Services. We need to solve this in order to get TSMC fabricated chips sent to Fermilab.

Custom Detector Technologies

- Thin Films for ProtoDune R&D
- Cleaning & heat treatment in vacuum oven of 4 Asahi dichroic filters.
- Coated 4 Asahi dichroic filters and 4 Omega dichroic filters with PTP on the glass side.
- Coated 3 Vikuiti foils (12 units) with TPB; packaged 4 coated Vikuiti foils (16 units)
 - Shipped to Colorado State University for assembly of Arapucas.
- Performed major cleanup of coating system between different dopent coatings.