

Detector Support Group

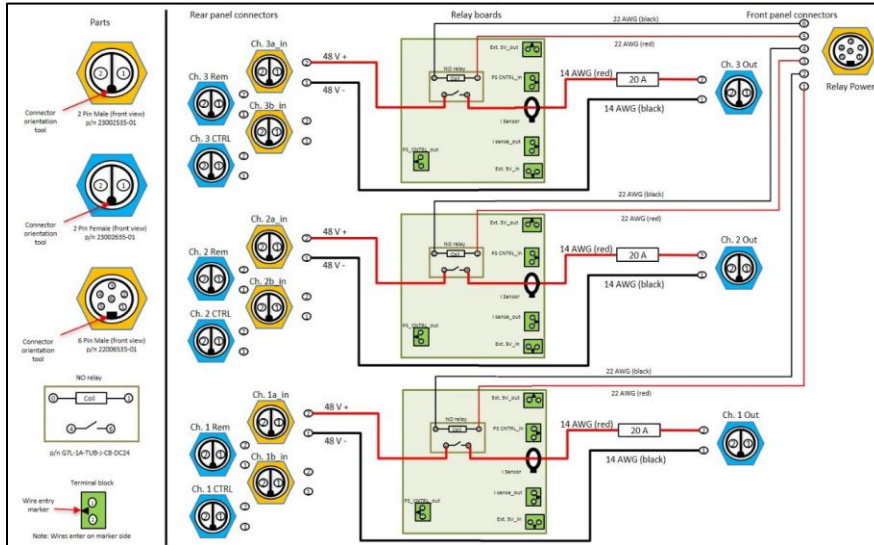
We choose to do these things "not because they are easy, but because they are hard".

Weekly Report, 2024-03-13

Hall A – ECAL Test Stand

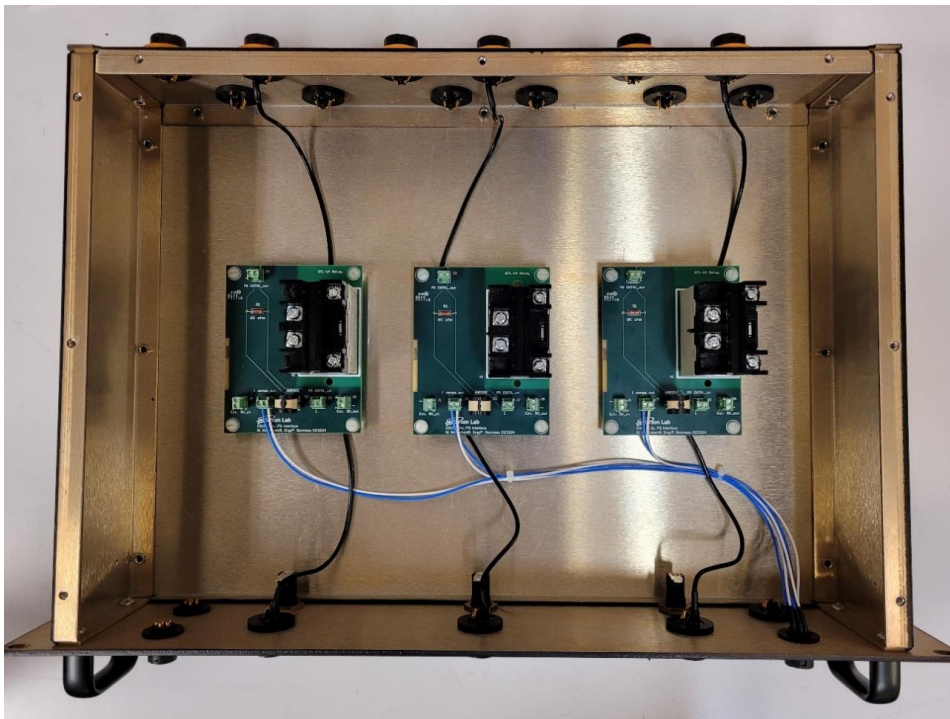
Marc McMullen and Mindy Leffel

- Power supply interface chassis
 - ★ Completed wiring diagram



Heater power wiring page of the power supply interface chassis wiring diagram

- ★ Populated three circuit boards and started wiring chassis



Partially wired power supply interface chassis

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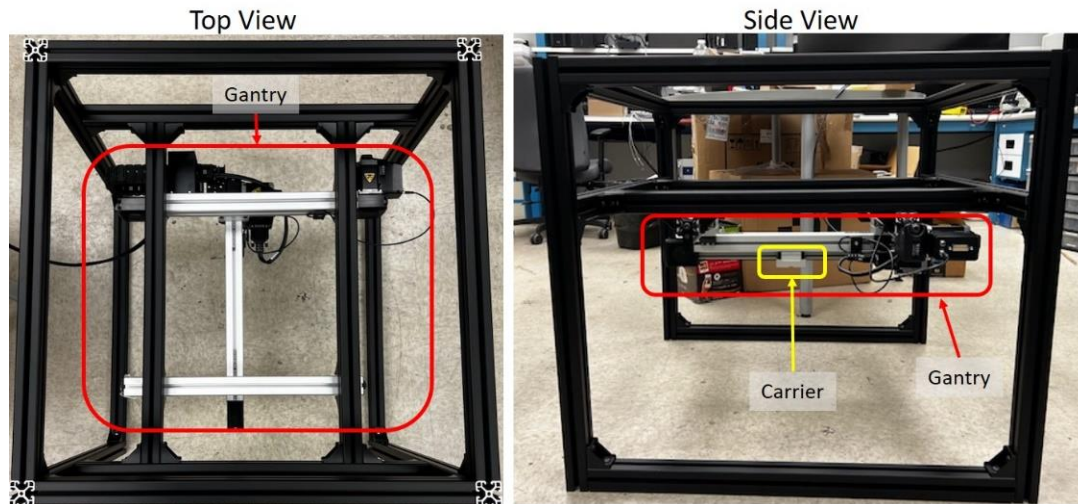
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Hall A – LAPPD

Pablo Campero and Marc McMullen

- Completed assembling gantry to support frame, using ~28" aluminum extrusions
 - ★ Updated NX 12 model to match the build size



Top and side views of the assembled gantry support frame

- Modified LED box NX 12 model
 - ★ Relocated insertion threads to the cover from the base, to allow assembly and disassembly in upside-down position
 - ★ Added heat set insert to model; changed holes' diameter based on heat set insert threads
 - ★ Working on cover to allow easy disassembly of the LED support
- Exported prt NX 12 files as STL files for 3D printing
- Installed Cura software on dsgcontrols2 computer, which is connected to Ultimaker S7 3D printer
- Ordering heat set inserts, soldering insertion tip, and extraction tip tool

Hall B – ALERT

Marc McMullen

- Started writing LabView code for the gas controls
 - ★ Developed DAQ subVI that monitors the pressures and flow signals

Hall B Magnets

Brian Eng

- Investigated multiple fast dumps on torus MPS
 - ★ Added logging to individual internal flow meters inside torus MPS
 - ★ <https://logbooks.jlab.org/entry/4262301>
 - ★ <https://logbooks.jlab.org/entry/4265567>
 - ★ <https://logbooks.jlab.org/entry/4265693>



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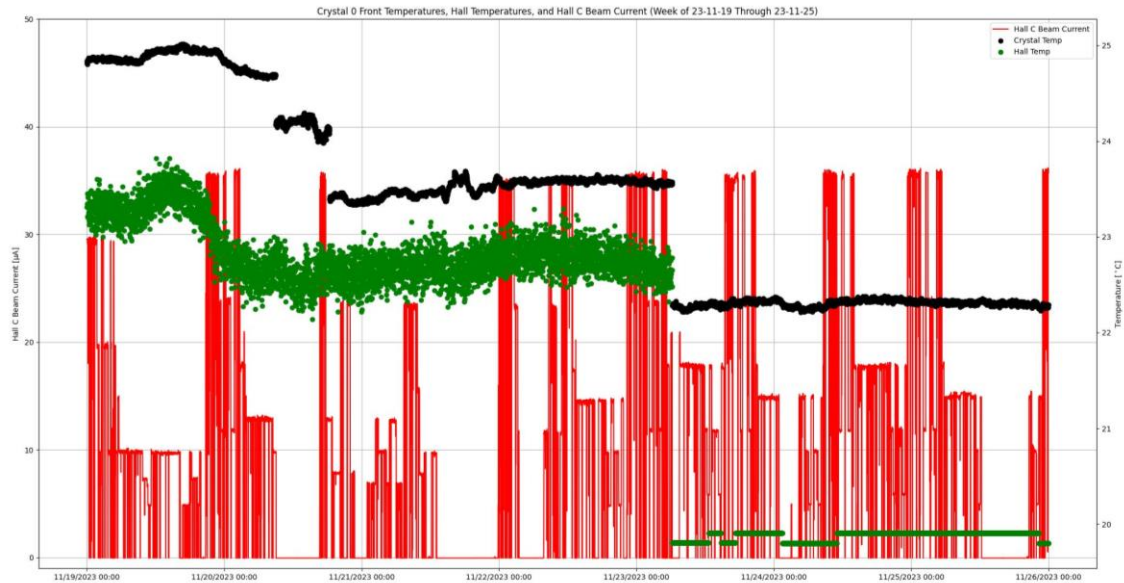
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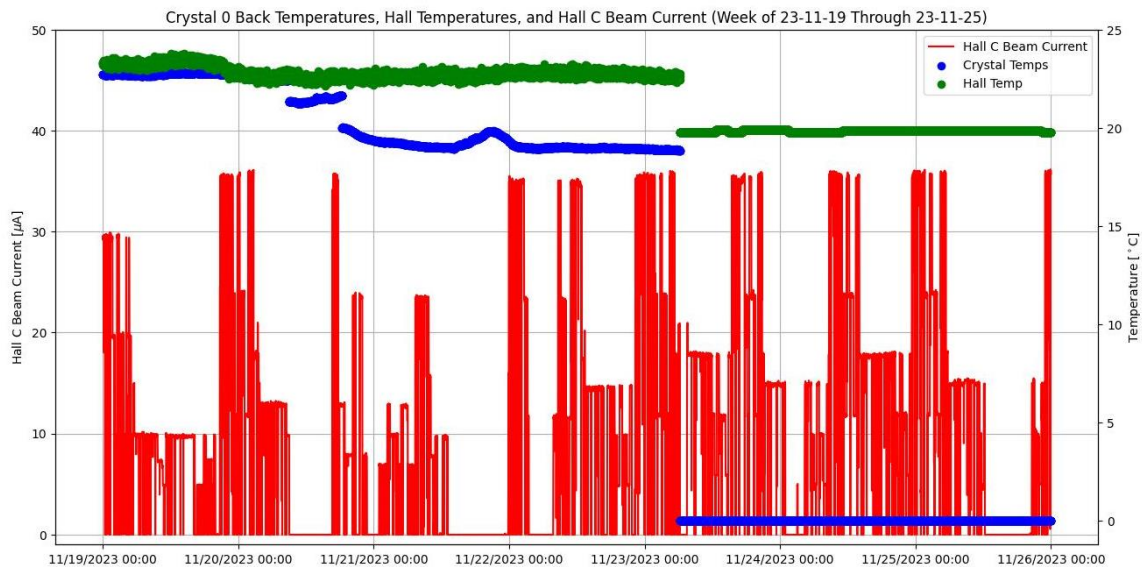
Hall C – NPS

Aaron Brown and Mary Ann Antonoli

- Completed temperature study of crystal temperature data from one week
 - ★ Neither the front nor the back temperatures for crystal 0 match what was in the talk given by Mark Jones
 - ★ The front temperatures never drop below 22°C; the back temperatures were as low as ~19°C, but not for the day shown by Mark Jones (2023-11-25)



Plot of front temperatures for crystal 0, hall temperatures, and beam current in Hall C for one week



Plot of back temperatures for crystal 0, hall temperatures, and beam current in Hall C for one week



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- Helped recover front crystal temperatures in the Hall
 - ★ Tested cables for terminal blocks of multiplexers 3 and 4 with a known good, fully populated, terminal block from the Keysight test stand; cables worked
 - ★ Switched the terminal blocks to spares and the front crystal temperatures returned
- Debugging version 2 of control and monitoring program's failure to trip
 - ★ Adding changes made to version that loses connection with the cRIO to a previous version, which has been stable
 - ★ Added LED indicators to each sequence in bad version in an attempt to determine exactly where the program fails; unsuccessful because the program loses and re-establishes connection with the cRIO in the sixth sequence, continues for one more loop iteration, and then crashes
- Working on version 3 of control and monitoring program
 - ★ Developed Python program to create a new configuration file
 - ★ Completed subVI of Keysight actions
 - ★ Began subVI to read configuration file

Hall D – FCAL2

George Jacobs and Mindy Leffel

- Populated 25 PMT bases
- Cut 360 wires and stripped 180
- Tested 103 PMT bases; 472 good bases tested
 - ★ Two had shorted low voltage caps, two has no signal, two had missing wires
 - ★ Number good tested with voltage regulators is 241; without is 231

EIC

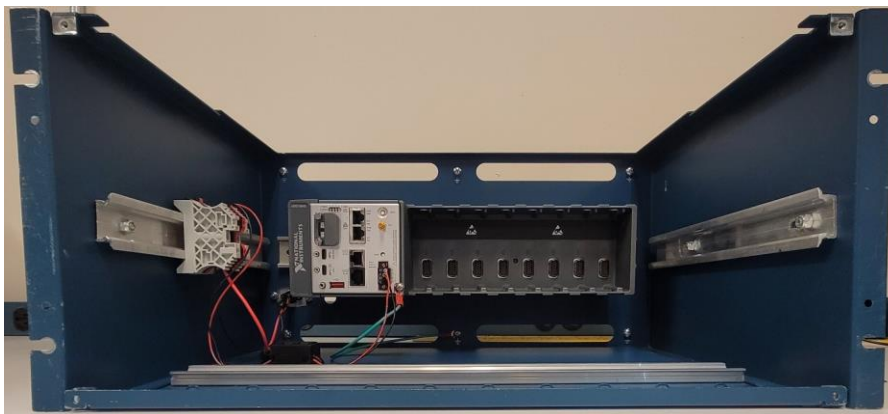
Brian Eng

- Attended day 2 of Page Turn and two days of dry runs for preliminary design review of tracking detectors

EIC – DIRC

Tyler Lemon, Peter Bonneau, and Mindy Leffel

- Populated and wired cRIO chassis



cRIO chasis



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- Researched options for accelerometer that would be usable over the ~4-day trip from SLAC to JLab
 - ★ USB accelerometers on hand will only last about six hours and have been discontinued
 - ★ Want accelerometers in one crate on each truck and the ability to log data over the entire trip
 - Two trucks will be used with four crates per truck
- The air spring pressure of the shipping crate suspension was tested at 25 psi and 30 psi
 - ★ Four USB accelerometers fixed to crate and six on barbox mock-up
 - ★ Crate loaded on flatbed truck and driven off-site
 - ★ Data pulled from accelerometers and data processing in progress
- Documenting and revising initial system hardware and software startup procedures and applications of laser interlock test with Phoebus alarm system

DSG – R&D

- Ansys Learning Hub has been reactivated for JLab users until April, 2024
 - ★ Registration form approved and received full access to resources
 - ★ Reviewing fluids modules

DSG – Website

Mary Ann Antonioli and Aaron Brown

- Fixed the text entry box on the search page to make it case insensitive
- Updated code for website talks to include the date for 2020 and 2021 through talk 20