

Hall A Update

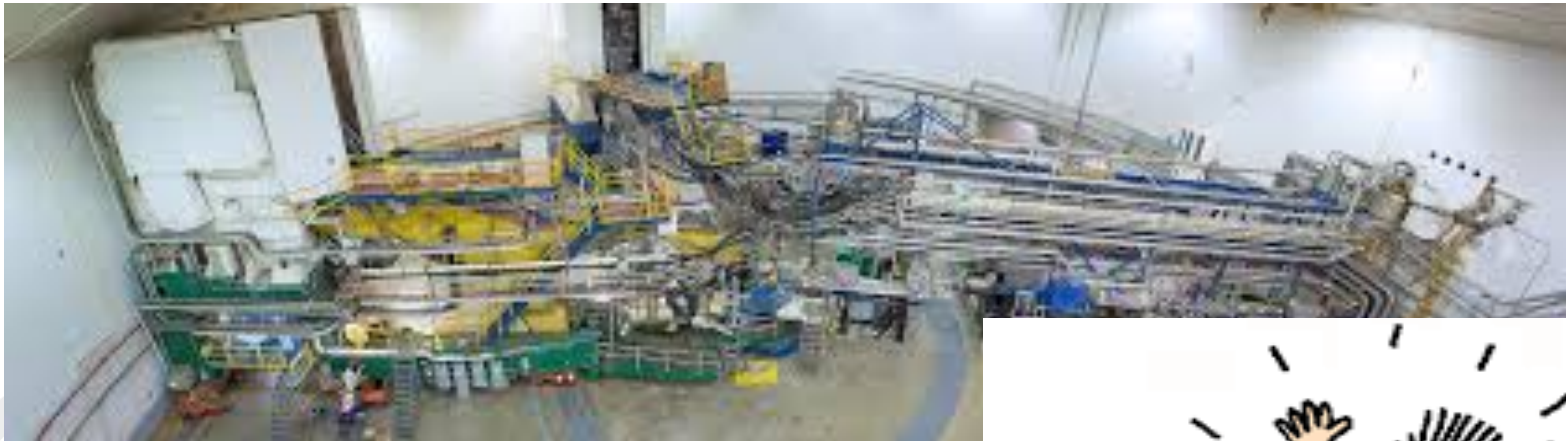
Thia Keppel



- January 2021
- Hall A Collaboration Meeting

Hall A Update ^{Field Trip}

Thia Keppel



- January 2021
- Hall A Collaboration Meeting

But, don't worry... I will mention scheduling!

PREX2/CREX Before and After



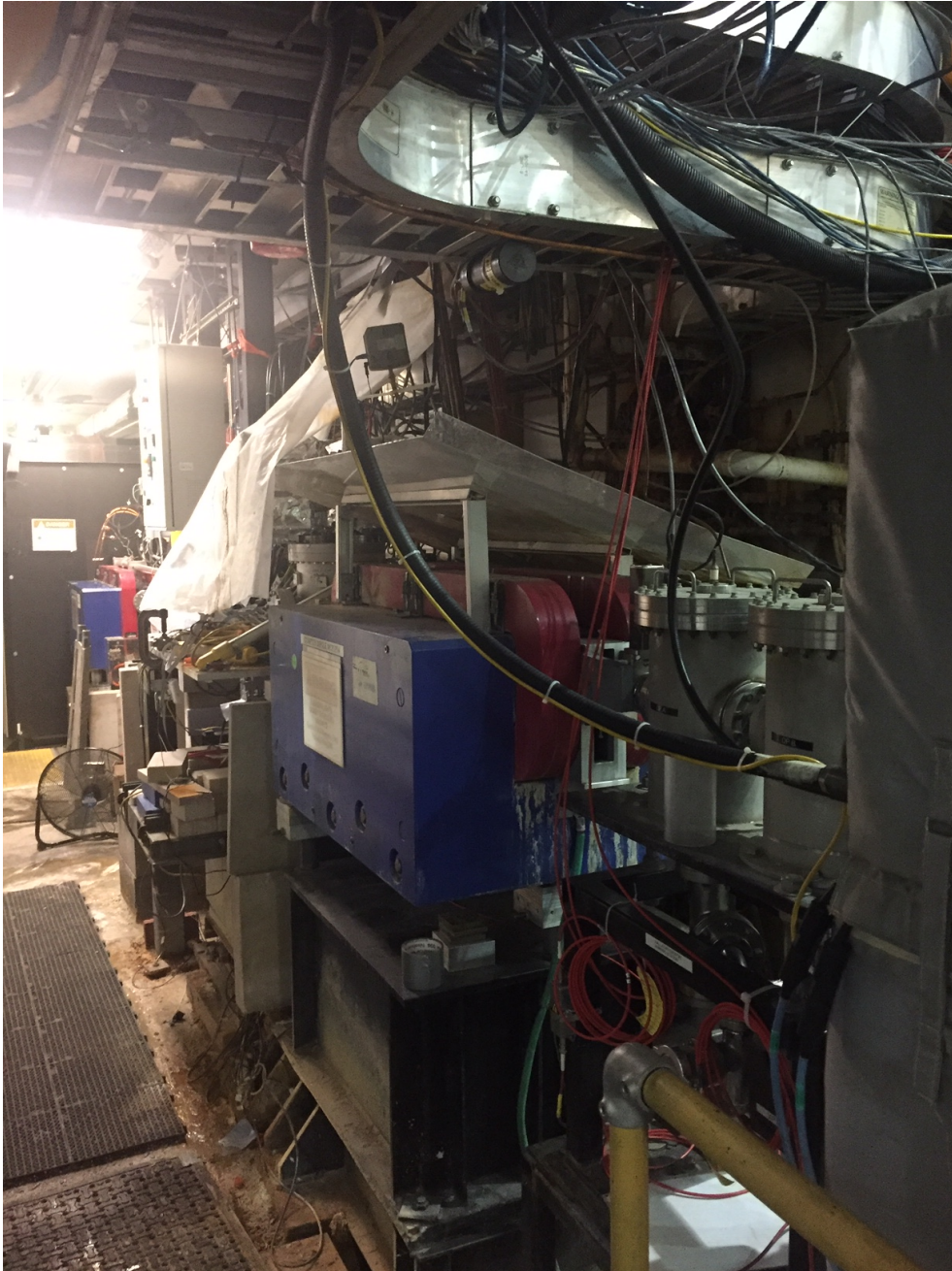
- Pb/Ca target system / scattering chamber
- Collimator (with cooling)
- Septum magnet
- Lots of shielding!
- Access platform

*Chandan and Don to
present results today!*

Gone... with help from
our friends in target
group and RadCon

Hall maintenance and upgrades –

Example: repair groundwater leak near Compton



Before

After



SAD provides opportunity to fix long-standing problem(s)

Working with facilities

Hall maintenance and upgrades – power and water



Before



After

Remove tritium vent
LCW upgrade
2MVA power upgrade

Replace main AHU

Decommission HRS-R

De-sting U-tubes

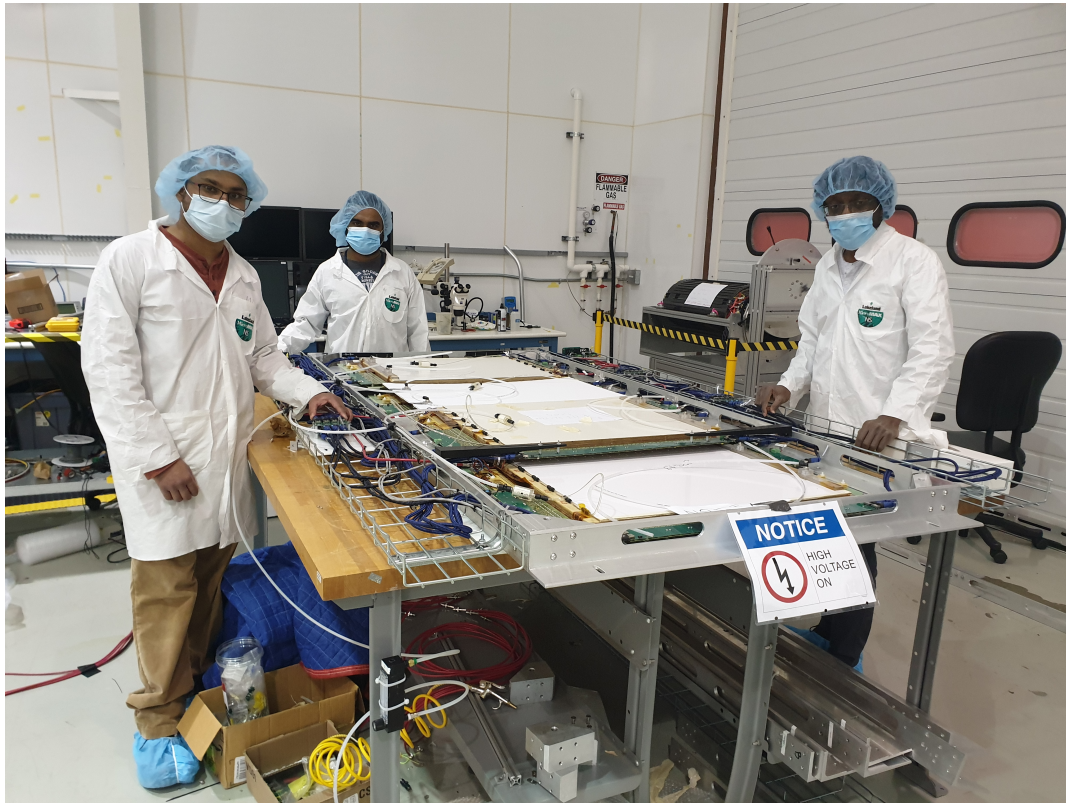


Close proximity
requires full PPE

COVID restrictions
carefully followed



Outside of the Hall: SBS GEM Testing



EEL 124 Clean Room
Assembly....



....and Testing

These are the UVA SBS GEMs, also have INFN SBS GEMs

Some GEMs going into BigBite

Ezekiel
working
on the
frames



Holly testing DAQ

Staff and users working (carefully under COVID restrictions) on BigBite upgrade



Arun Tadeipalli and Chuck Long (JLab)

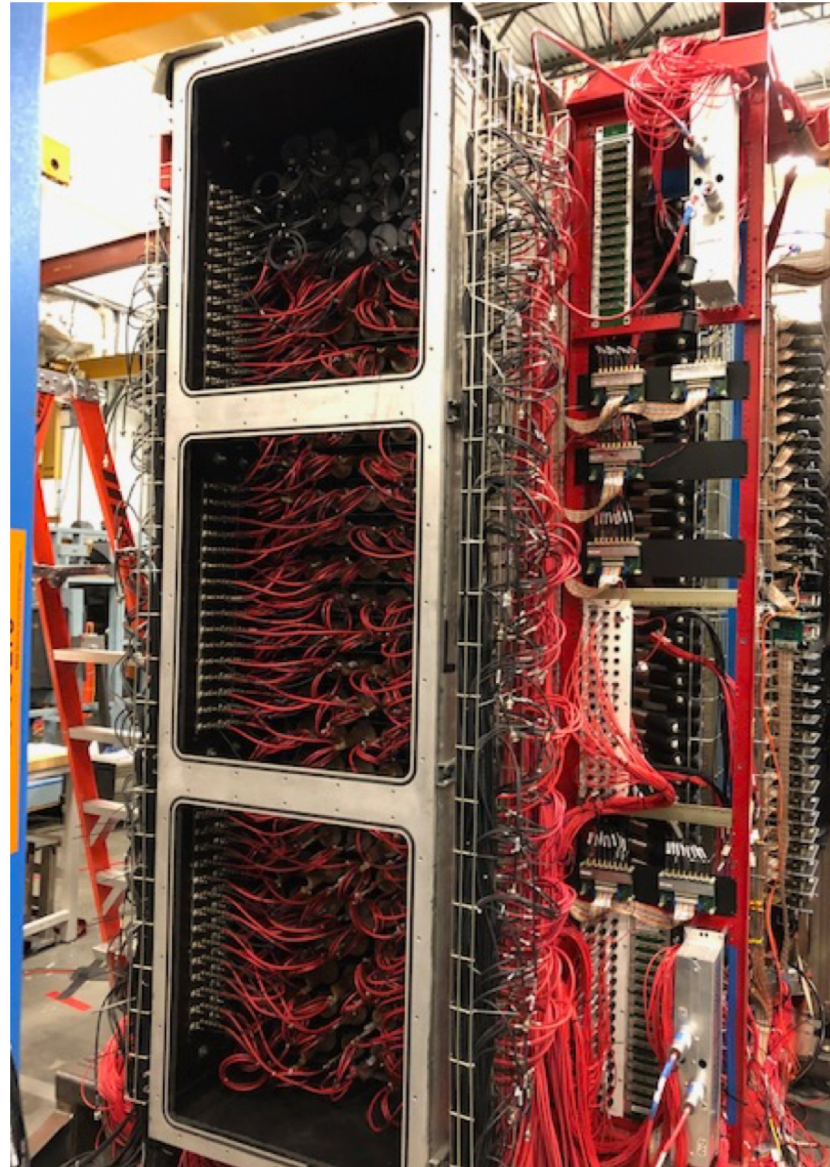


Ralph Marinaro (Glasgow) and Maria Satnik
(William and Mary)

Shower counter refurbishment



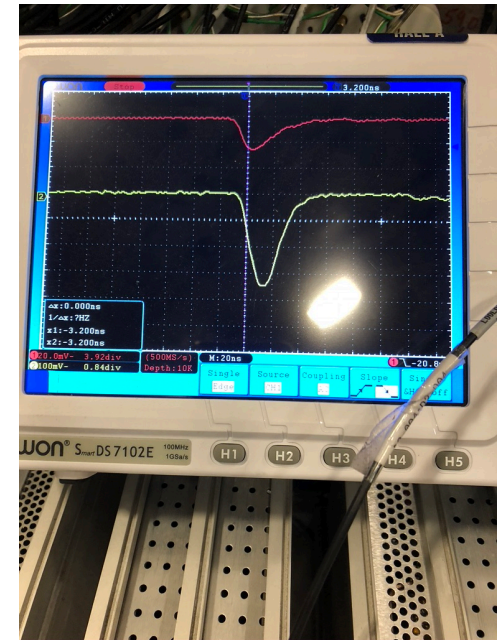
Shower stacking with more efficient blocks and mu-metal plates



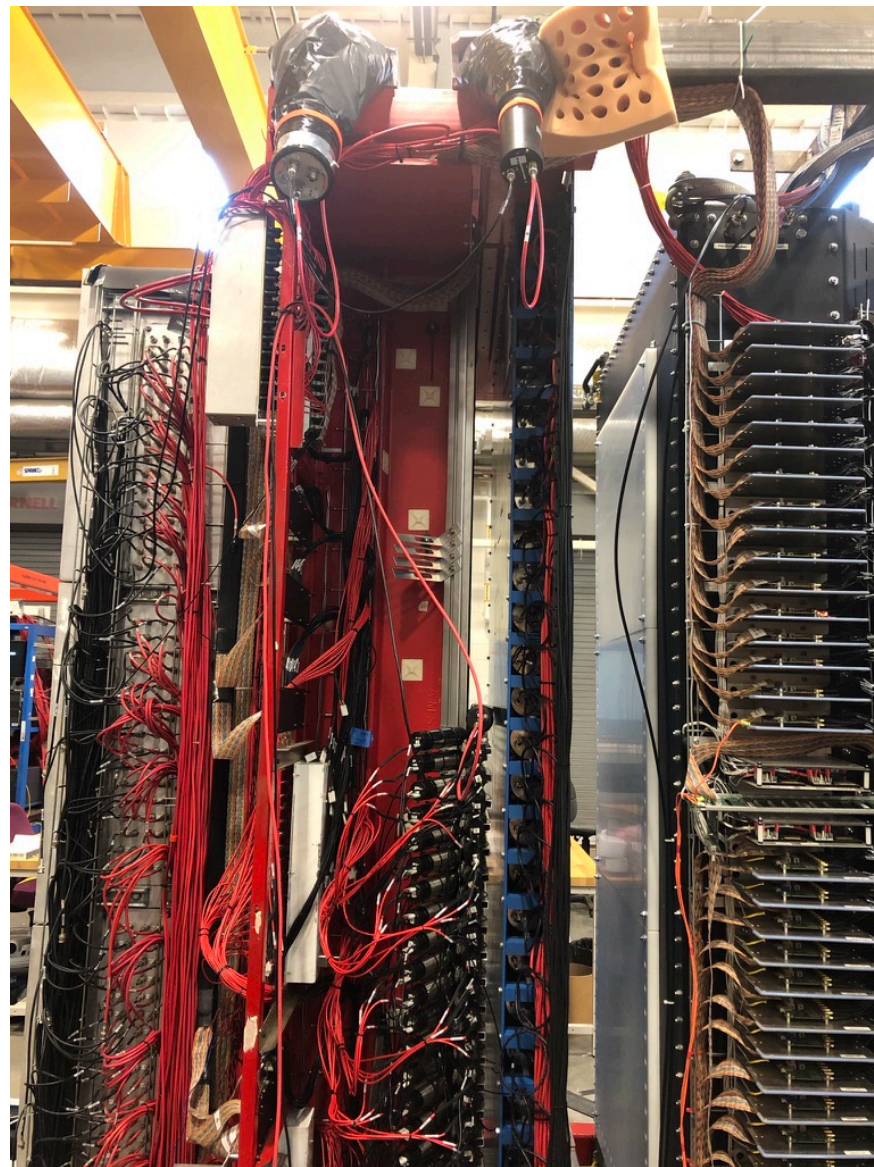
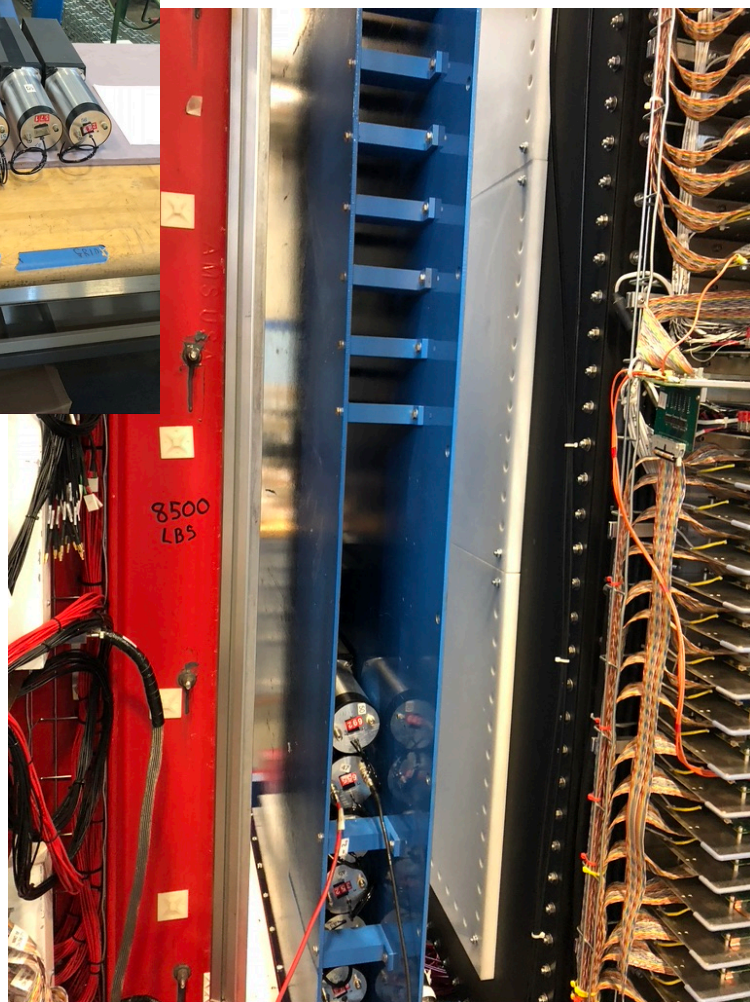
Inside the shower



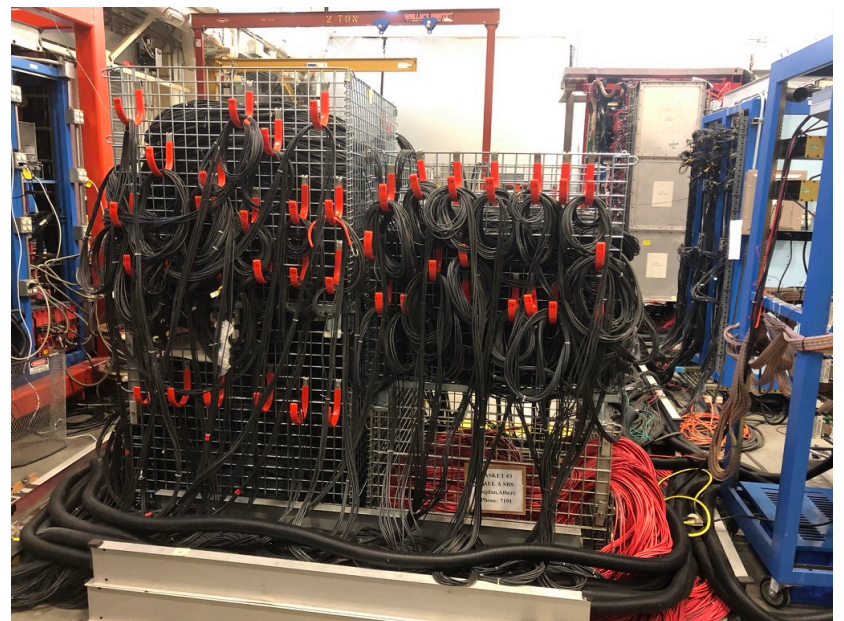
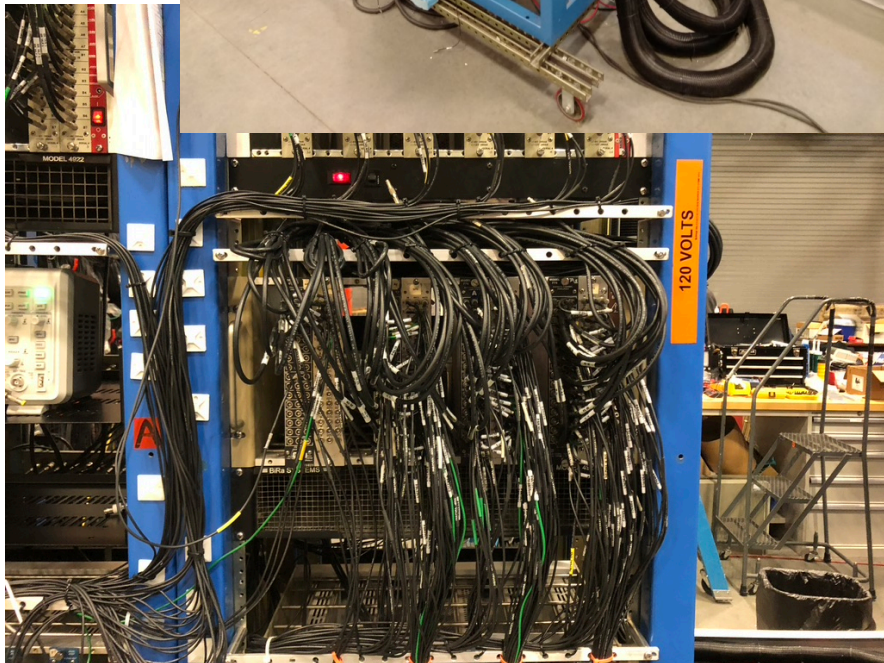
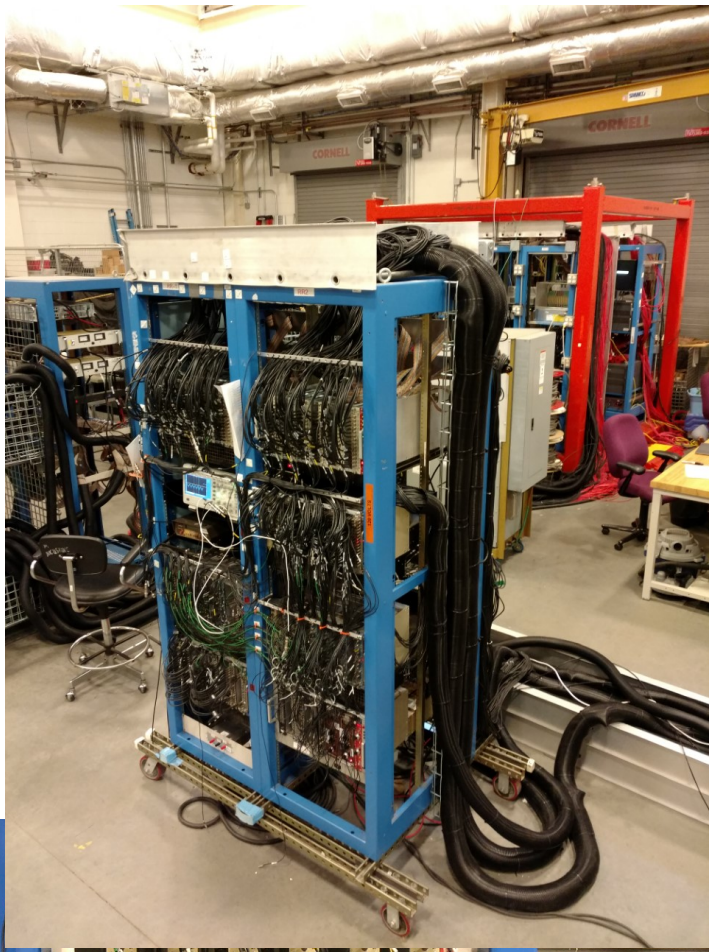
Applying UV curing light to cure the epoxy



Preshower stacking

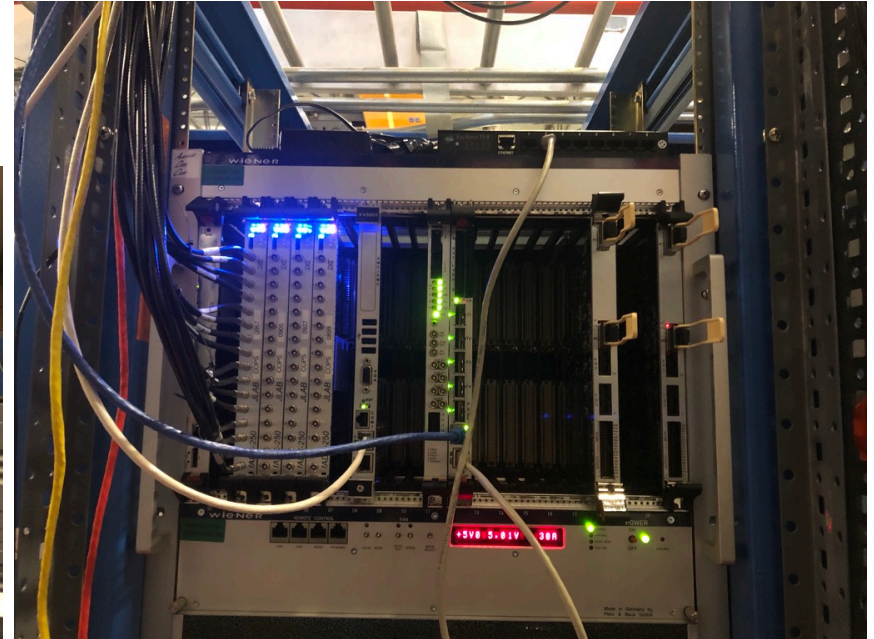


Lots of
cabling!

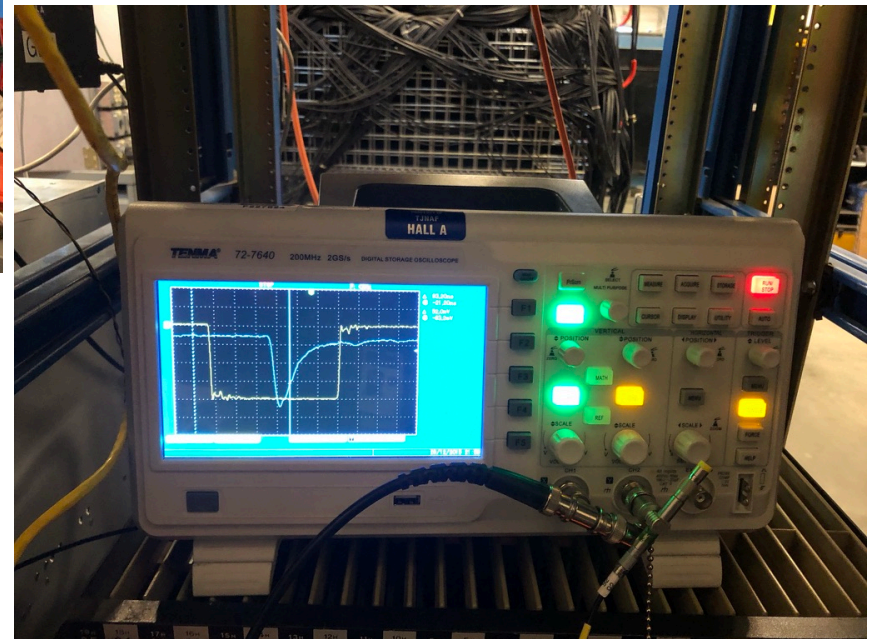


fADC

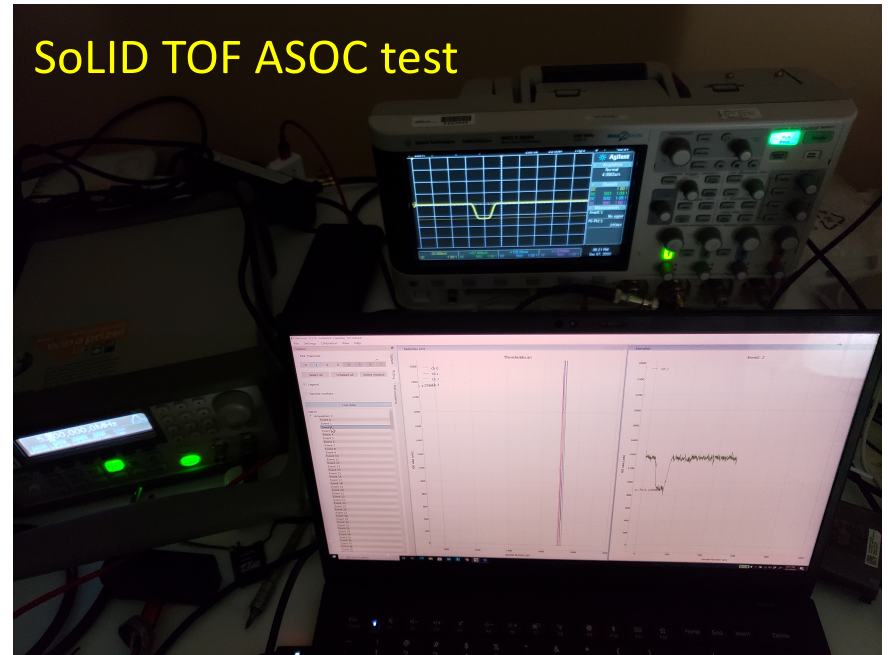
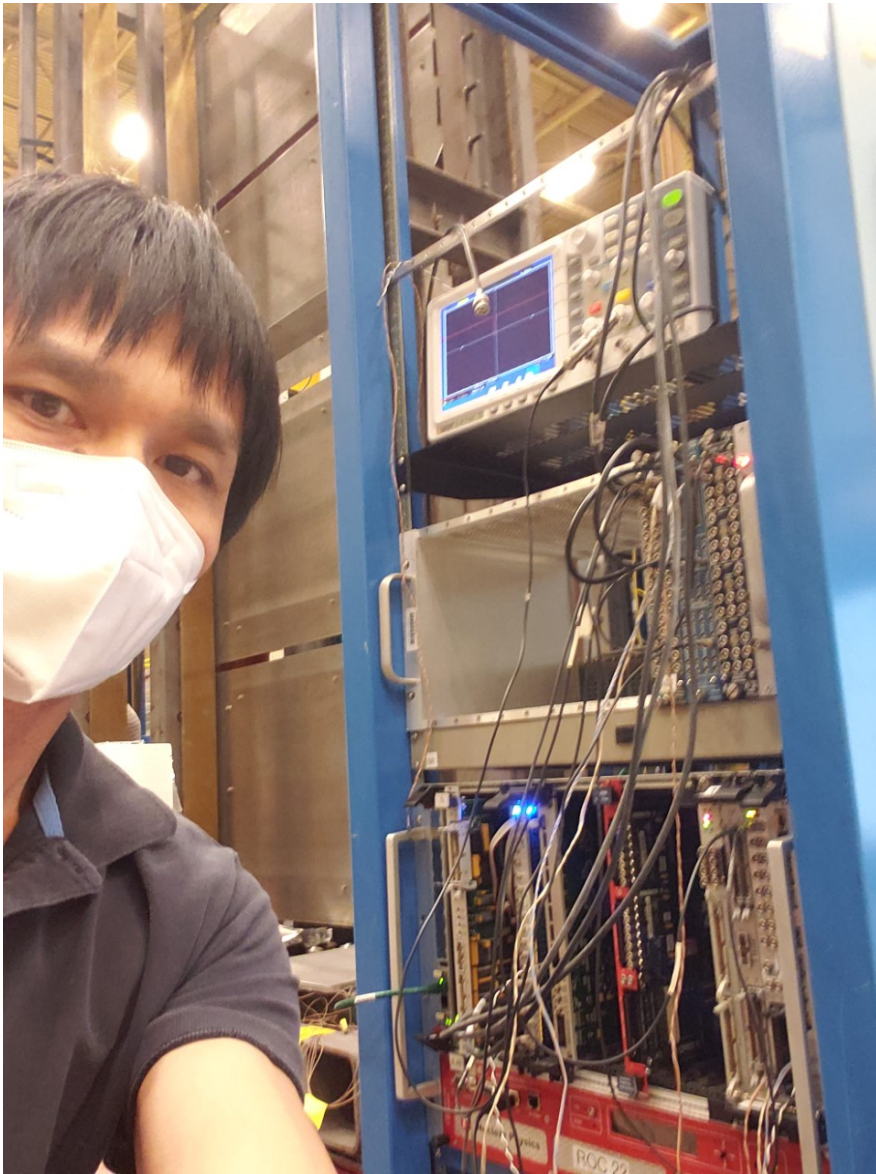
BigBite weldment and DAQ



Yellow – gate from Fastbus
Blue – timed raw signal from one of
the blocks relative to the gate



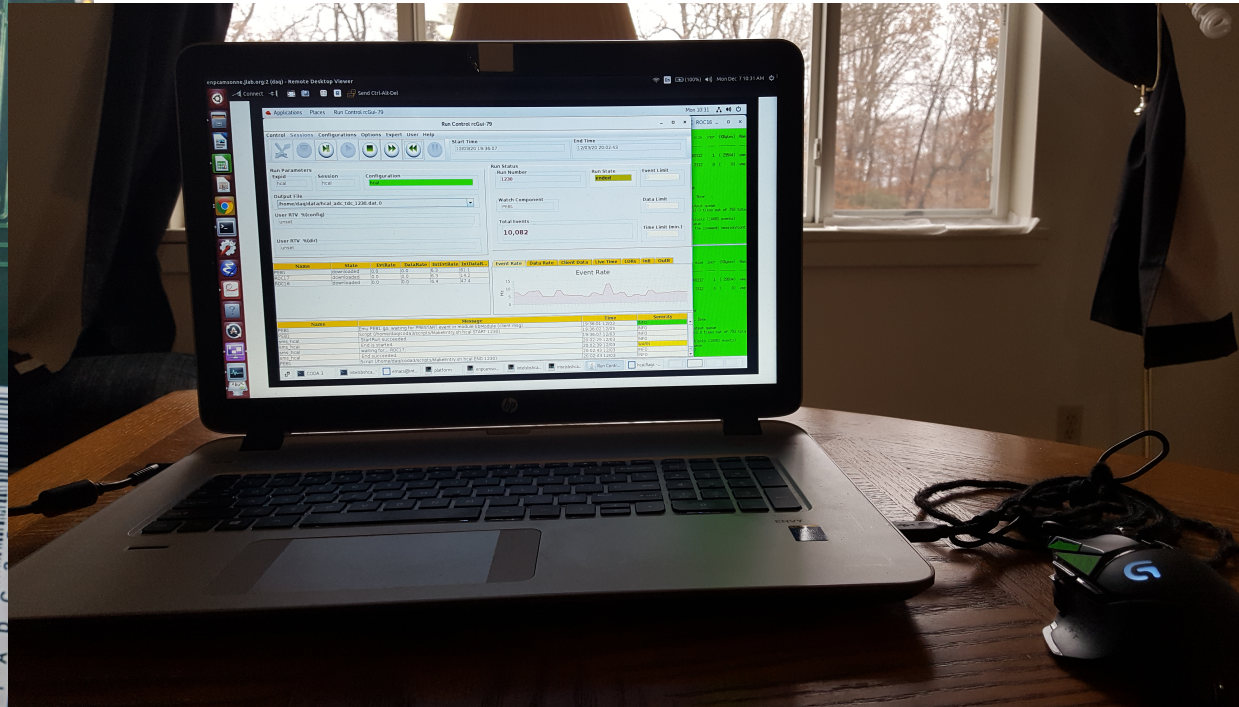
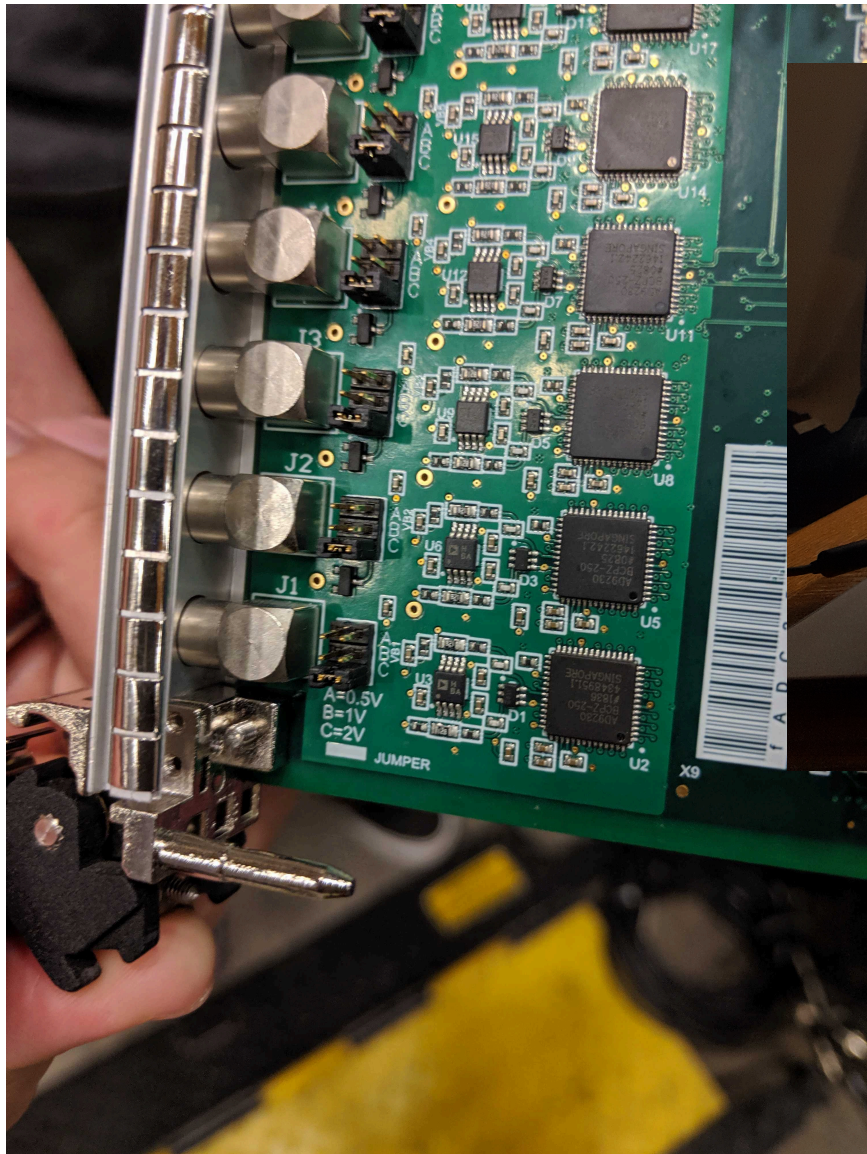
General data acquisition installation/testing...



DAQ:

MULTIPLE set ups at lab

Tests in part at home



fADC250 electronics board - changed jumpers that determine the dynamic range to all be 2 Volts

Fully remote cosmic testing at home!

...and more!

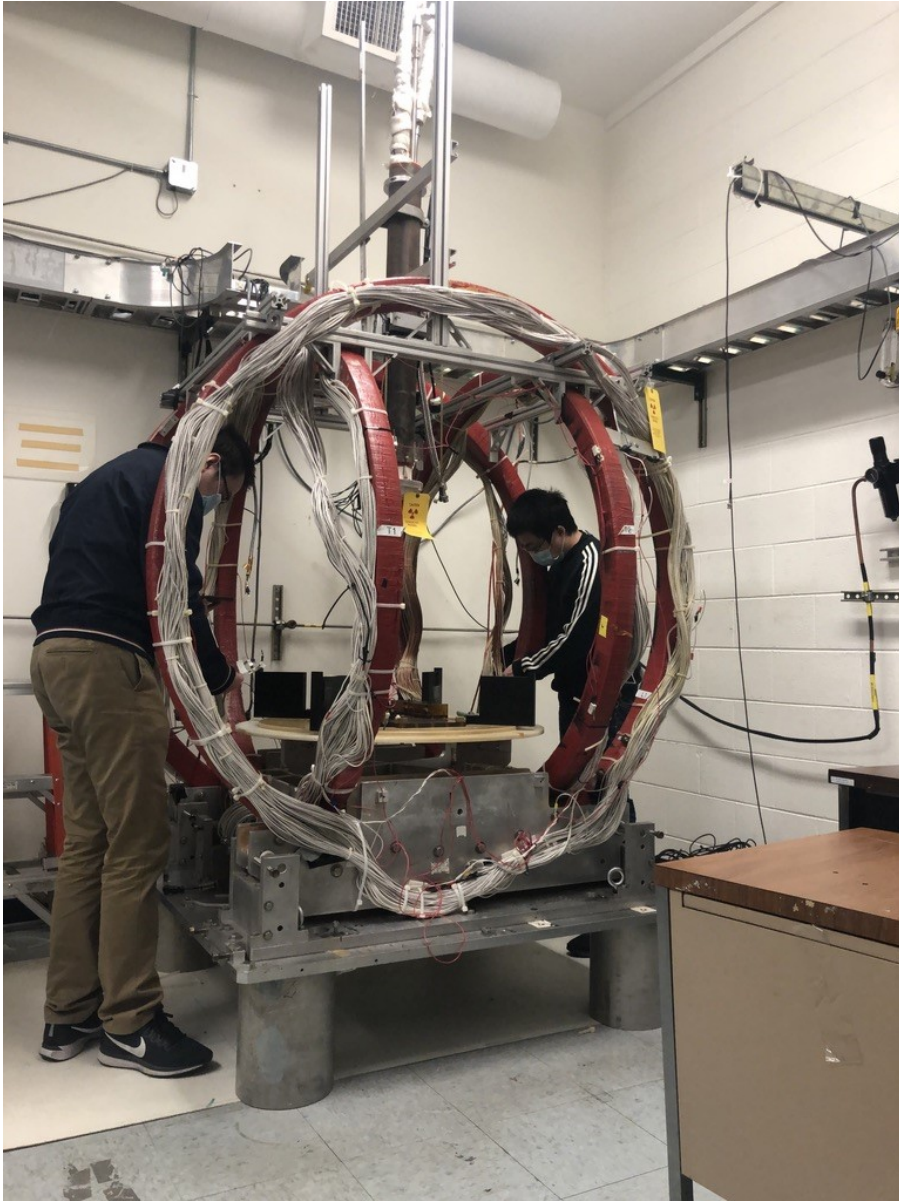


Cdet (Ralph Marinaro)



SoLID MAROC
(Bishnu Karkey)

To the future...

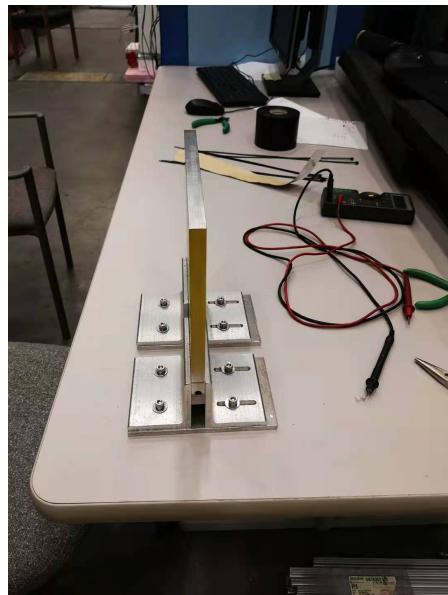


Polarized ^3He target out
of Hall C, in laser lab
preparing for SBS G_E^n

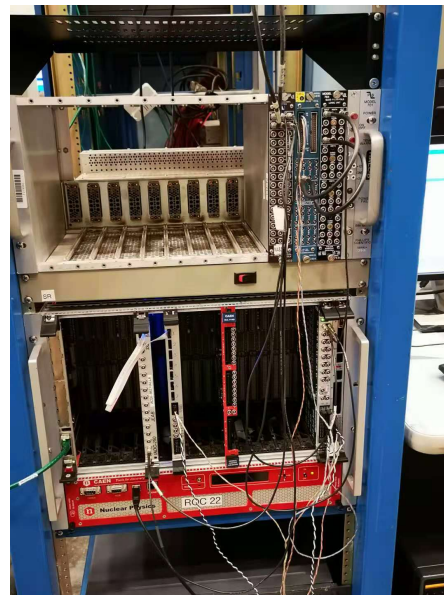
SoLID ECal Testing (in test lab)



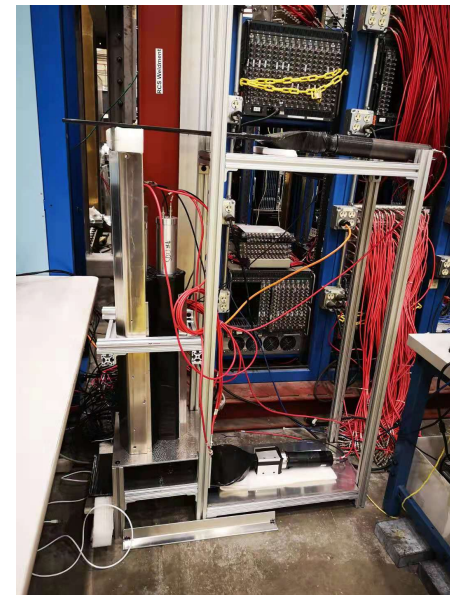
3 ECal (Shashlik) Modules



Pre-Shower
Stand

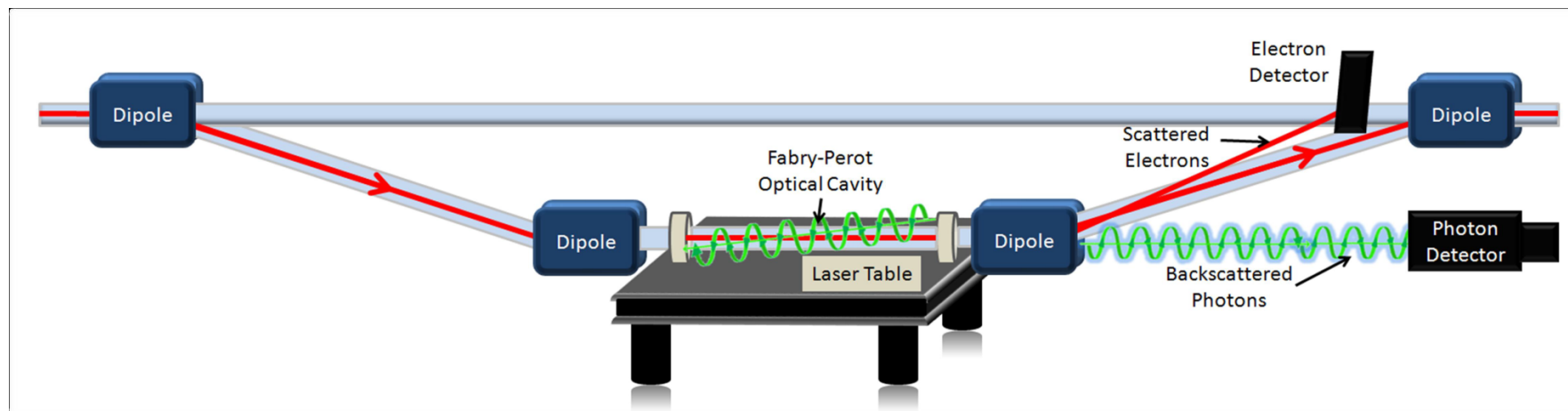


DAQ Seup



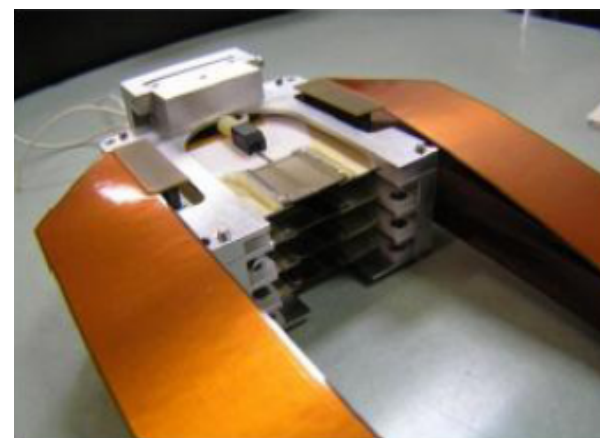
Test Setup

Precision Polarimetry in Halls A and C – preparing for MOLLER



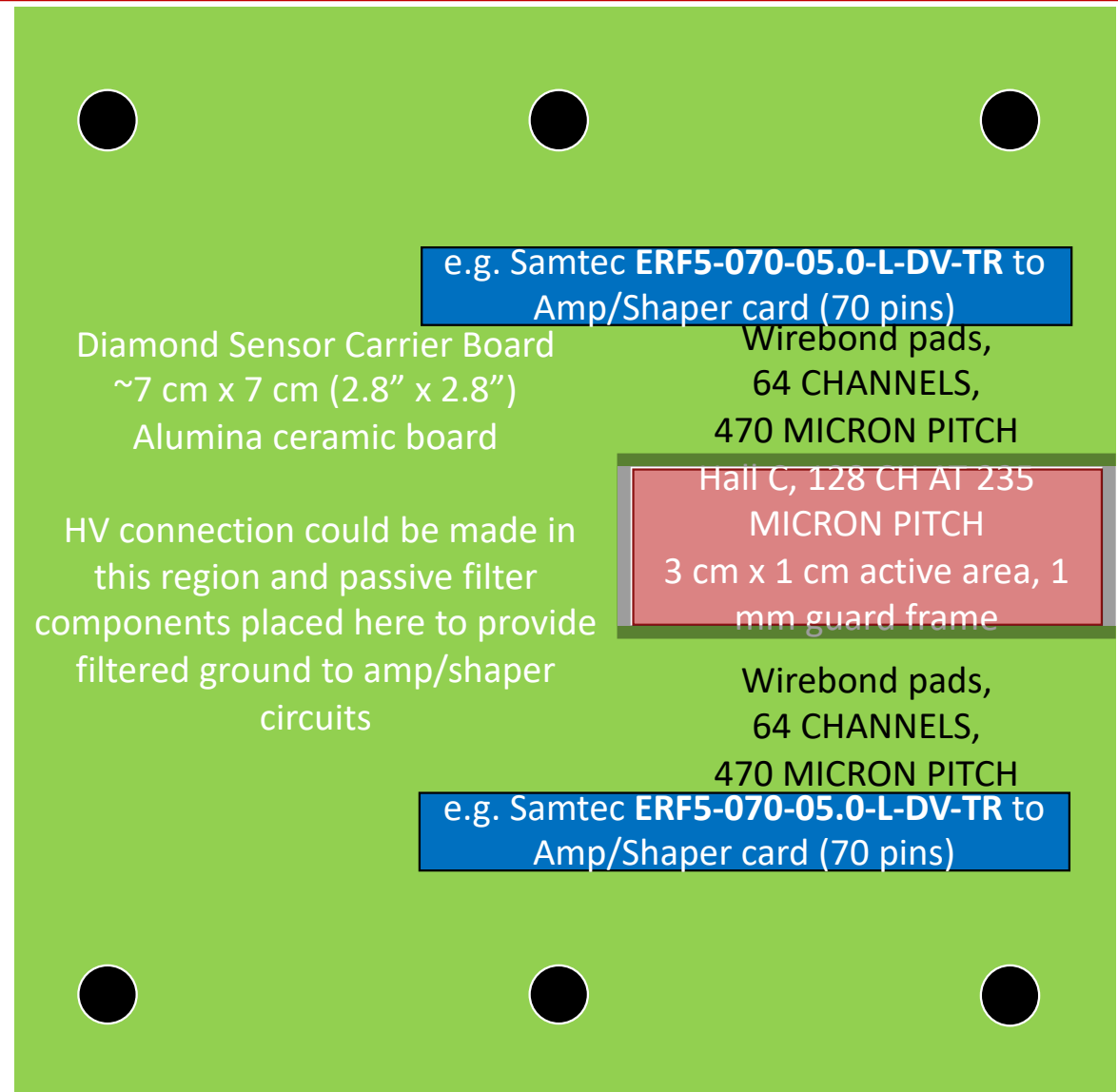
HIPPOL capital equipment project goal: achieve similar capabilities in Compton polarimetry in Halls A and C

1. Improved laser system in Hall C → *seed laser, fiber amplifier purchased*
2. Update Hall C electron detector DAQ → *VETROCs, VXS crate in hand*, VETROCs used/commissioned during CREX
3. Larger electron detector in Hall C and new detector for Hall A (diamond)



Hall A and C Electron Detectors

- Working towards common Hall A/C design
 - 3 cm tall detectors needed for Hall C
 - 6 cm in Hall A → 2 Hall C detectors stacked vertically?
- Pricing information in hand for diamond substrates
- Talking to University groups, vendors, JLab fast electronics about readout scheme
- Analog amplifier on detector board (in vacuum) + discriminator outside vacuum
- In parallel, U. Manitoba working on HV-MAPS detector solution



Diamond detector board concept (Jim Fast)

Møller Polarimetry

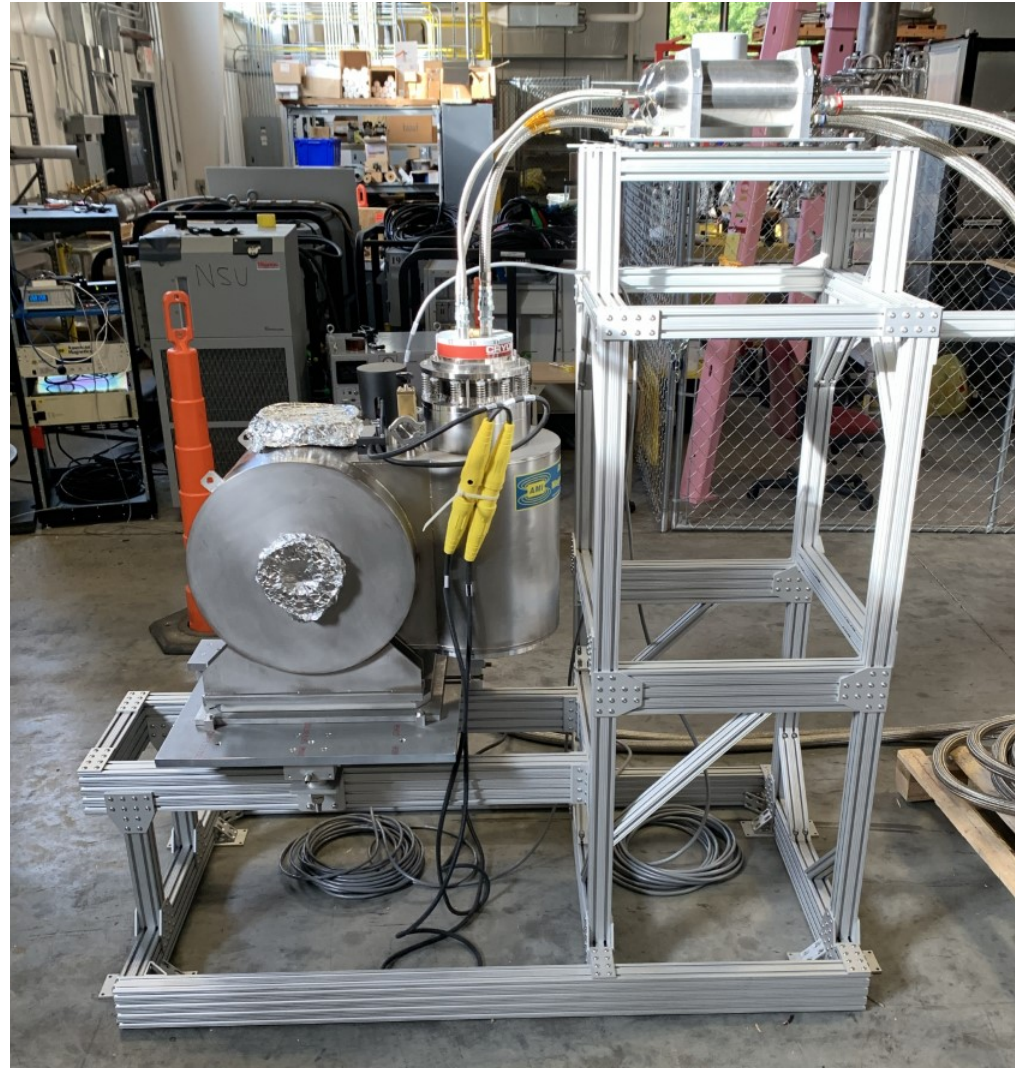
See Eric King's talk tomorrow!

Hall C has purchased “cryogen free” superconducting target magnet similar to Hall A version (not HIPPOL)

- Less dependence on ESR provides more flexibility
- Standardization provides backup capability for either hall

Setup in ESB - convenient for further Kerr studies to verify iron foil saturation

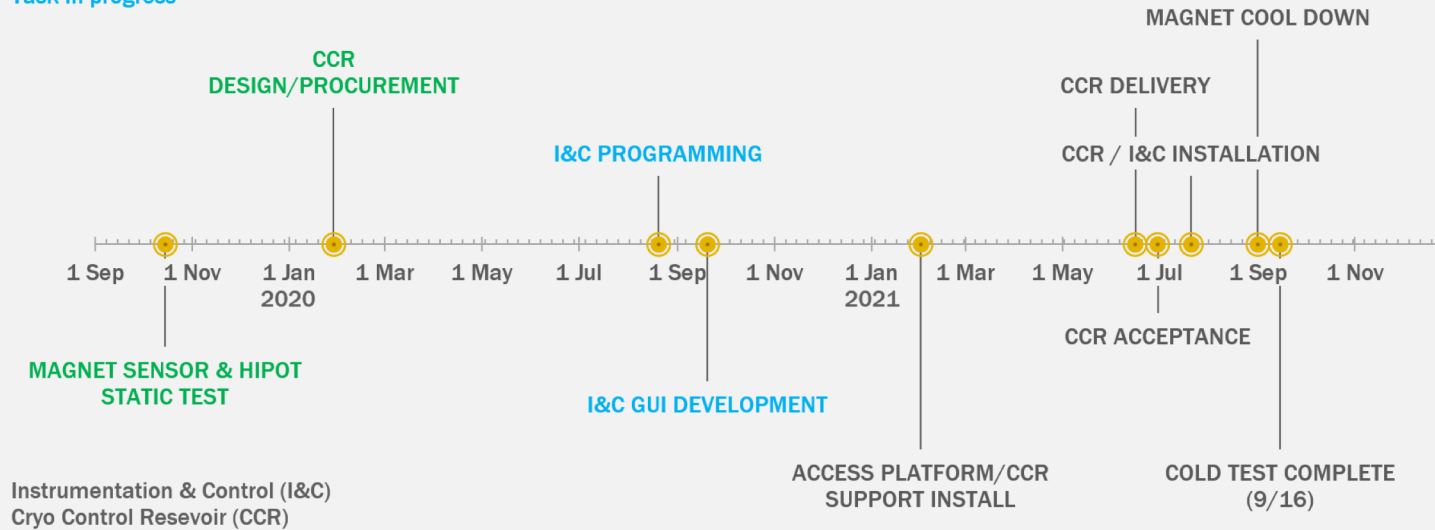
Magnet has been ramped to >3.5 T and fiducialized



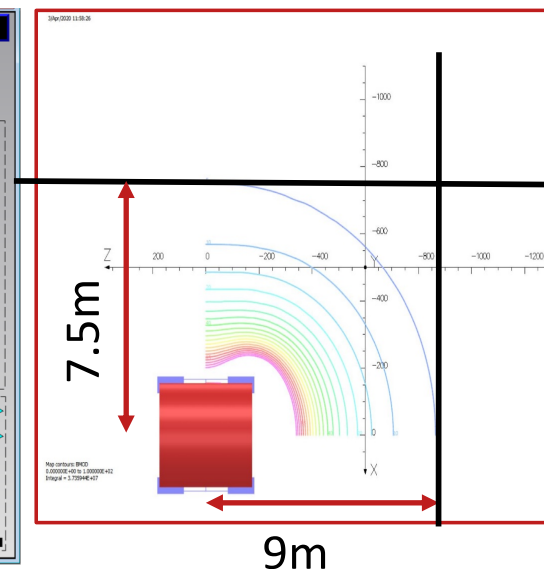
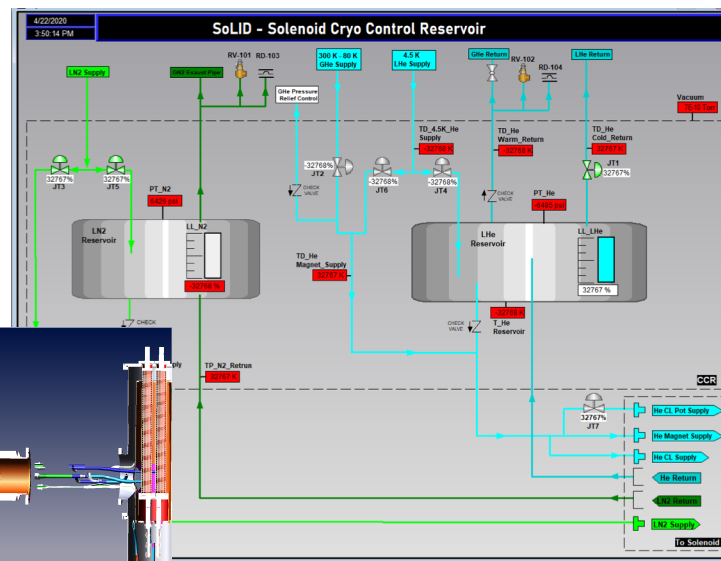
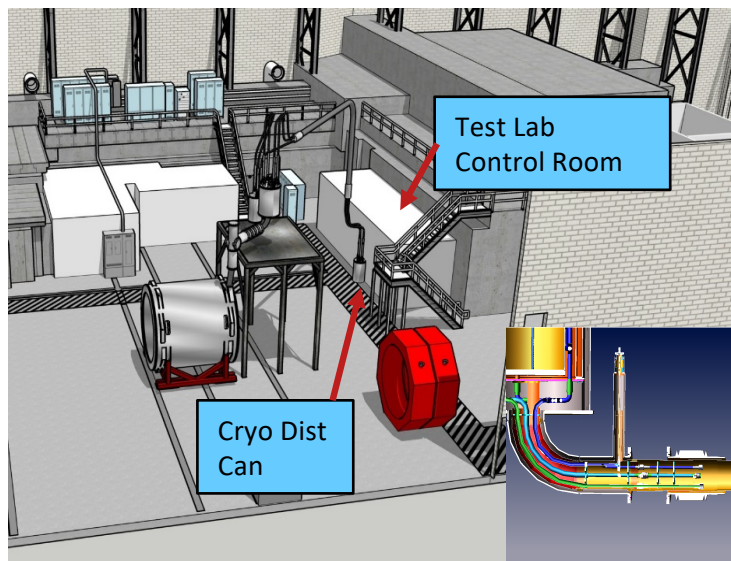
CLEOII Solenoid Rehab – Static and Cold Test

Phase 1 Solenoid Rehab Milestones

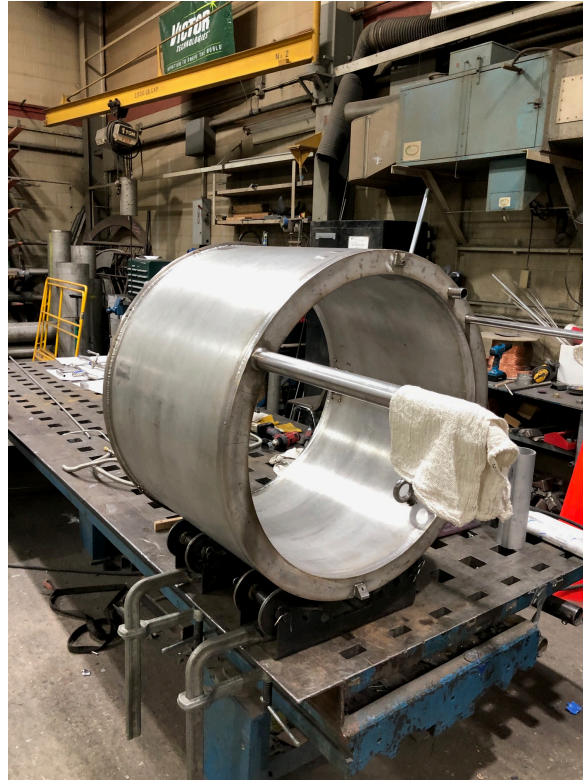
Task Completed
Task In-progress



- Solenoid rehab will confirm magnet condition
- Provide project risk reduction
- Refine magnet planning
- Estimated completion Sept 2021

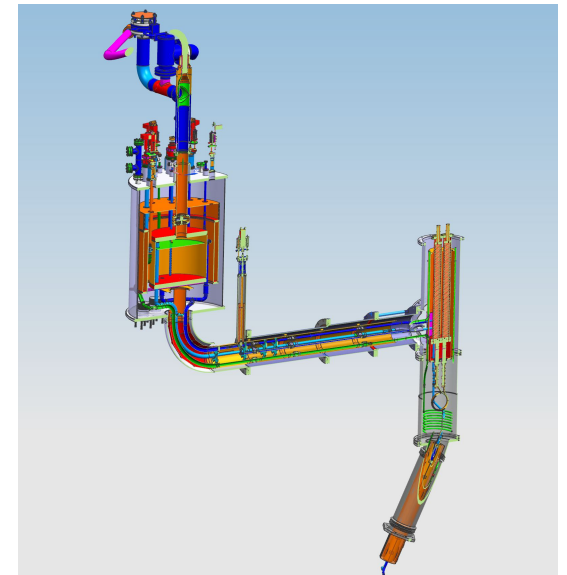
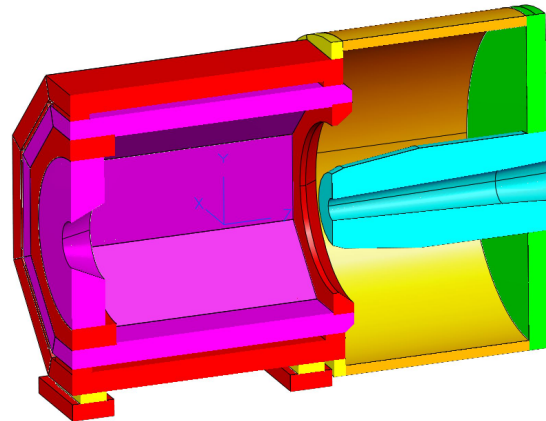


CLEOII Magnet Refurbishment for SoLID



- The CCR is at JLab....
- Being tested for acceptance
 - leak checking
 - pressure checking
 - visual inspections
- Working on this...
 - hardware to install - pressure gauges, vacuum gauges, JT motor actuators,...
 - PLC programming nearly complete

- Design of spool piece connecting the CCR and current lead turret.
- Updated openings for the beamline/acceptance at the front of the magnet and bore through the downstream nose, also chamfers on the tip of the nose



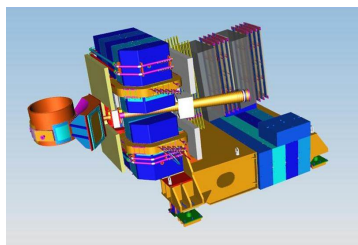
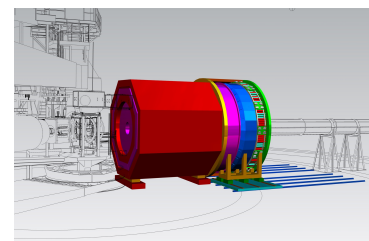
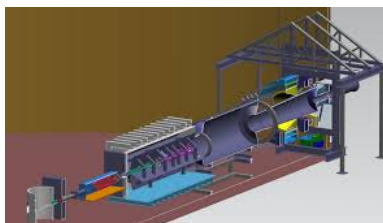
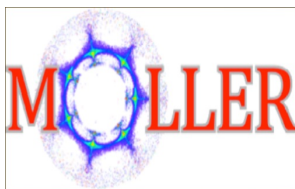
Field trip complete!



Some other things....

Scheduling

Uncertainties in
budgets, run weeks,
approvals and bears oh
my... here's what we
know:



?

...and more!

- Please send Stephanie information regarding recent (and upcoming) PhDs – name, university, experiment, thesis title if possible
- The web page needs updating – let us know ideas, and if you'd like to help
- 7 2020 publications
- Preparing for SBS to start this summer 😊😊

Thank you!