

COMMUNITY STANDARDS

Welcome to Jefferson Lab!

Everyone at Jefferson Lab has a responsibility to foster an environment where all employees, users, students, guests, visitors, and subcontractors feel safe, welcomed and supported in advancing the Lab's mission.



DIVERSE IN COMMUNITY
United in Science

While it is not possible to provide a complete list of the types of improper behavior below, prohibited conduct includes, but is not limited to:

- Offensive verbal comments
- Bullying or deliberate intimidation
- Stalking/following
- Repetitive photography of the same person(s)
- Gender-based insults
- Displaying or circulating sexually suggestive materials
- Inappropriate physical contact
- Unwelcome sexual attention or advances

Everyone is expected to embody the values of professionalism, respect, and diversity as well as cultivate a supportive and inclusive environment where the opinions of others are embraced. Behaviors not aligned with the lab's values will not be tolerated. Failure to adhere to this Community Standard may result in being barred from further lab events, suspension of site access including housing at the SURA Residence Facility, and/or removal from the site.

If you or someone else feels uncomfortable in the workplace or believe you are subjected to a hostile or harassing environment, or have any other related concerns, please contact the Jefferson Lab Ethics Officer, Rhonda Barbosa, immediately at rbarbosa@jlab.org or via the Lab's Ethics Hotline at <http://www.jsaecp.ethicspoint.com>. Alternately, you may contact your sponsor or the DEIA Program Manager at dei@jlab.org.

Hall C Status

January 2025 Winter Hall C Collaboration Meeting

Mark Jones

Hall A/C Group Leader

Bob Michaels

Hall A/C Deputy Group Leader

Jan 2025

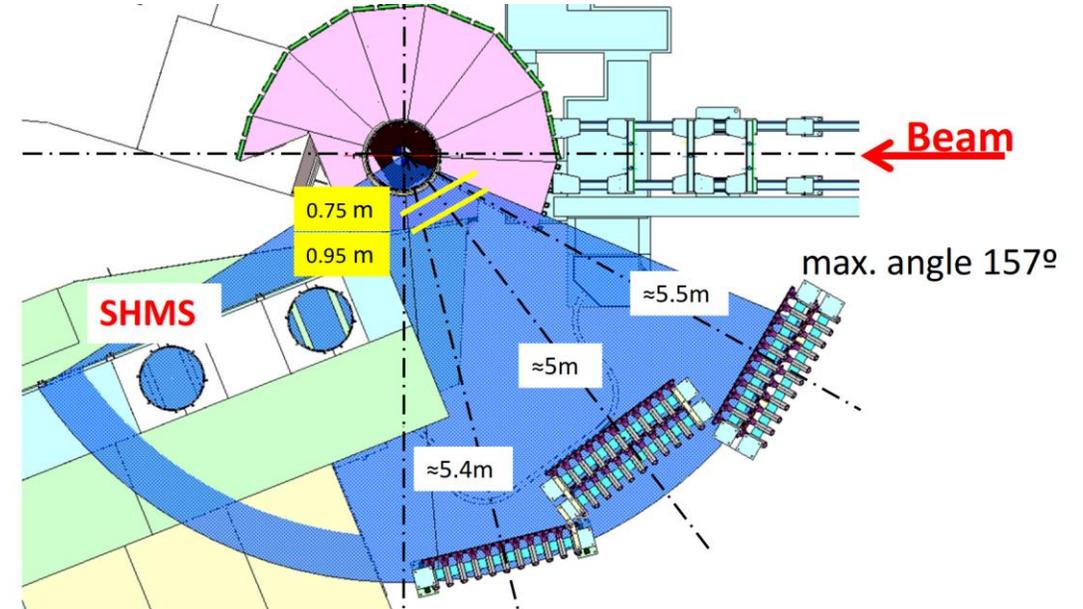
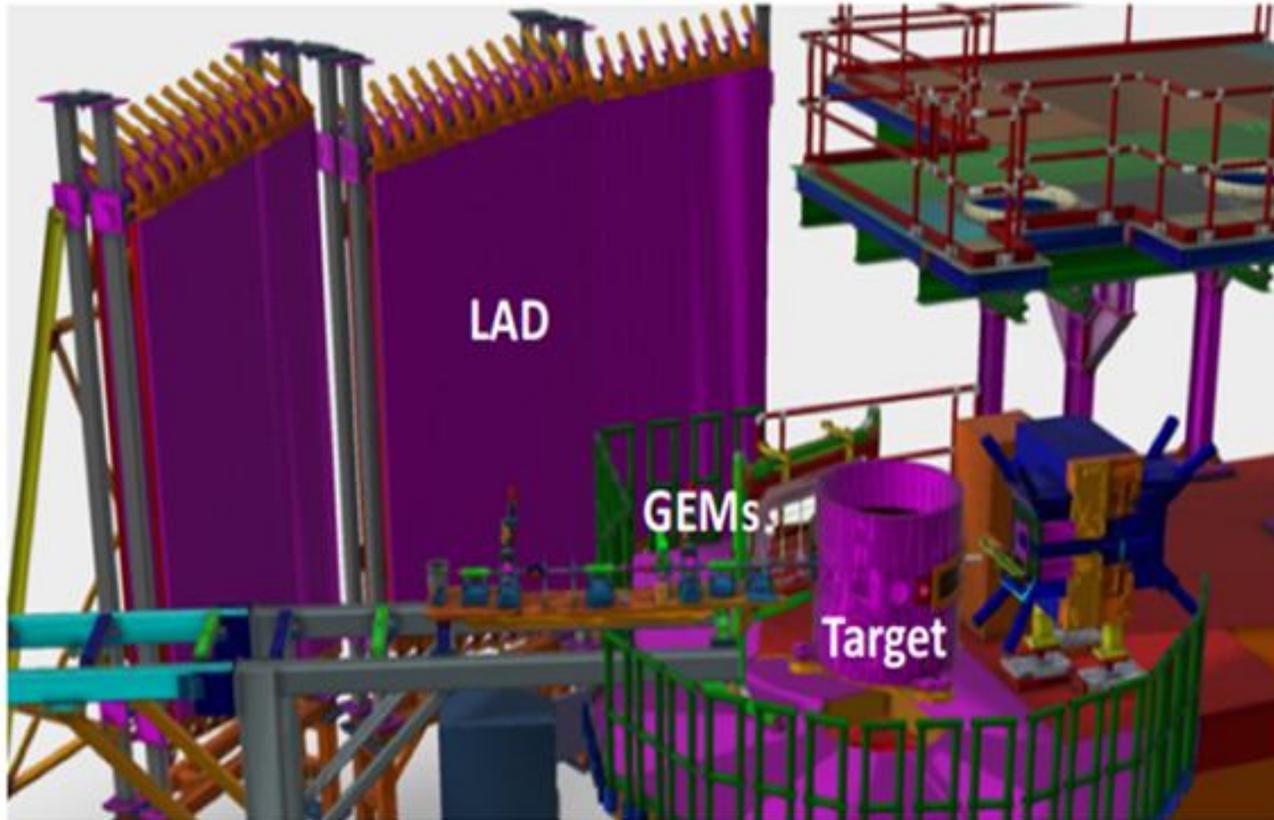
Hall C status

- Physics start date will be the earliest of Feb 14th.
- On the Scheduled Accelerator Maintenance calendar, the Physics start date is Feb 28th.
- At this point , the physics schedule end date is sliding.
- Reminder, only running 25 physics weeks. Still in CR, so Lab does not have a budget.
- First experiment is about 3 calendar months
 - E12-11-107 Spectator tagged DIS $d(e, e' p_s)$
- Second set of experiments is also about 3 calendar months
 - E12-06-104 $R = \sigma_L / \sigma_T$ in SIDIS on 1H and 2H
 - E12-24-001 Nuclear Dependence (C,Cu) of R in SIDIS

Hall C: Upcoming run period

E12-11-107 Spectator tagged DIS $d(e, e' p_s)$

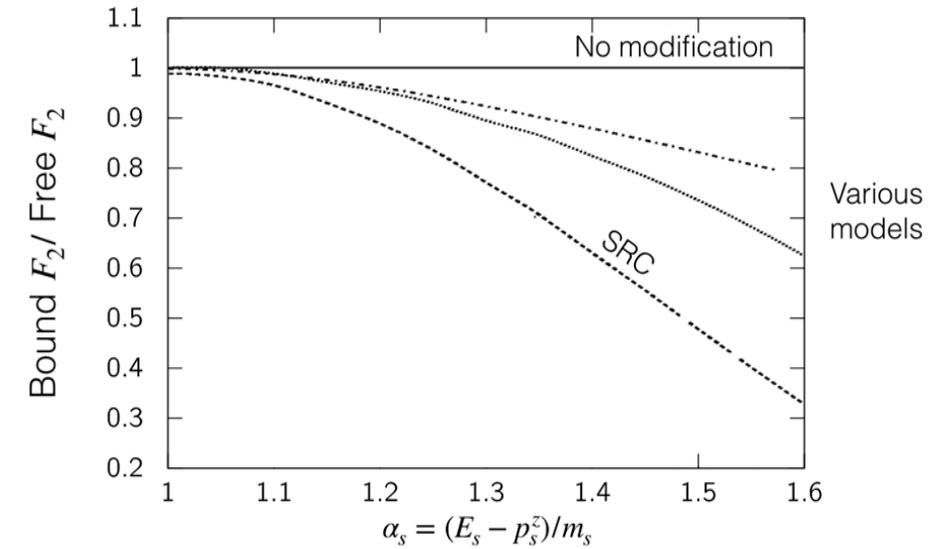
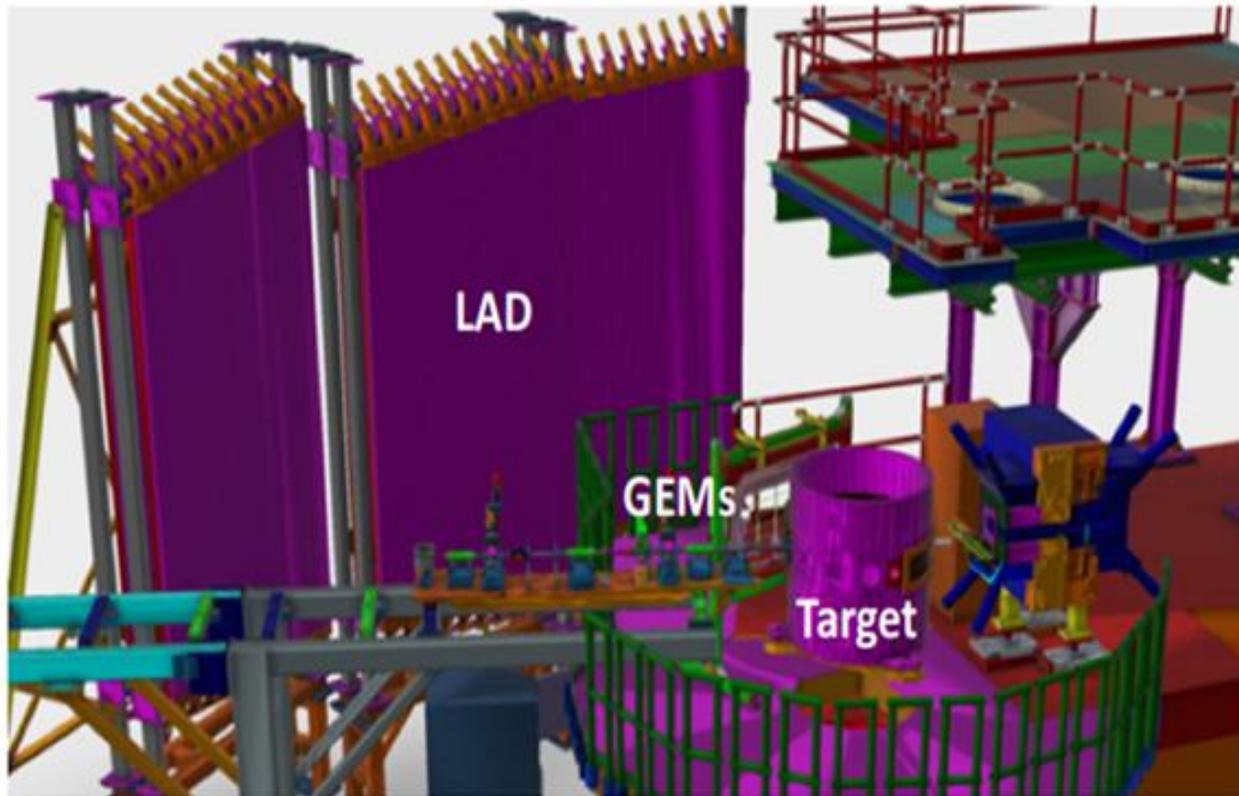
- Install Large Angle Detector to detect the spectator proton
- HMS/SHMS detect DIS electron
- Scattering chamber rotated so large opening to 157 deg
- 20cm LH2 target with opening for 157 deg



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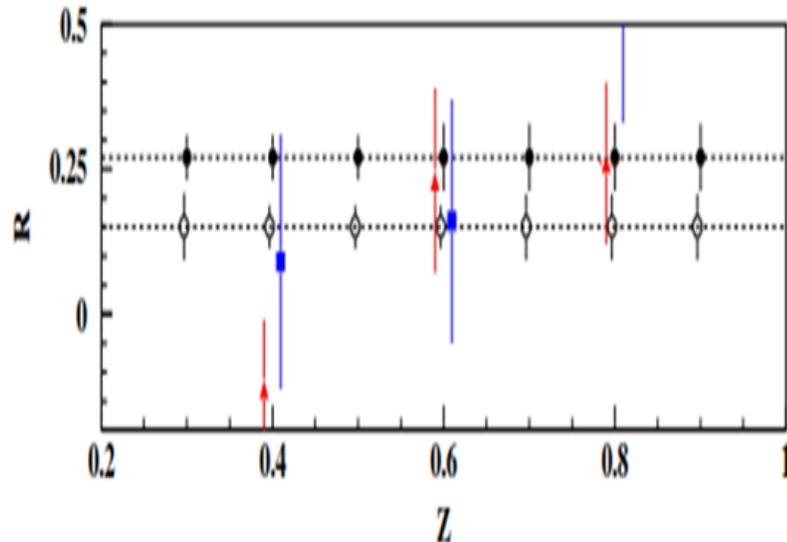


- Does the EMC Effect depend on nucleon virtuality?
- Measure Bound F_2 by tagging the SRC proton in $D(ee'p)$ DIS and look for nuclear effects
- Will provide crucial information needed for identifying the origin of the EMC Effect

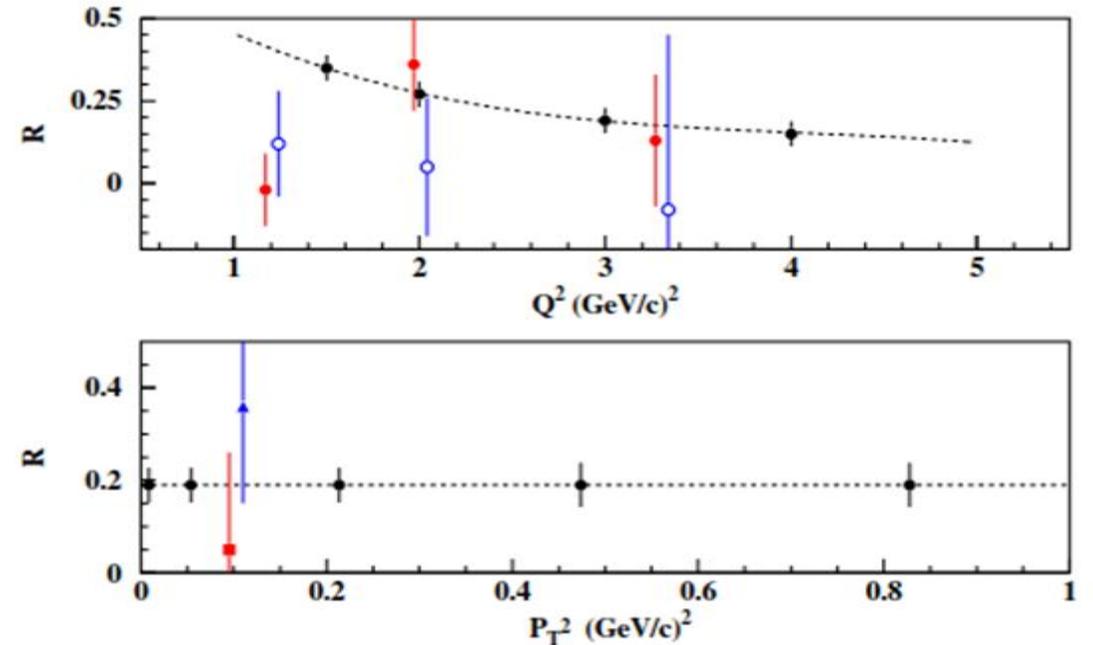
Hall C: Upcoming run period

- [E12-06-104](#) $R = \sigma_L / \sigma_T$ in SIDIS on 1H and 2H
- [E12-24-001](#) Nuclear Dependence (C,Cu) of R in SIDIS

- Verify whether $R_{SIDIS} = R_{DIS}$.
- Check the z -dependence of R from the semi-inclusive to the exclusive region.
- Verify that R_{SIDIS} anneals to R_{DIS} at large p_T .
- Verify if R_{SIDIS} follows the Q^2 dependence of R_{DIS} , at two values of x .
- Verify that $R_{SIDIS}^{\pi^+} = R_{SIDIS}^{\pi^-}$ and $R_{SIDIS}^H = R_{SIDIS}^D$.
- With a factor of ten reduced statistics: map $R_{SIDIS}^{K^+}$ and $R_{SIDIS}^{K^-}$.



- Map $R_{SIDIS}^H + R_{SIDIS}^D$ as function of z at $x = 0.2$ and $Q^2 = 2.0 \text{ GeV}^2$ (168 Hours)
- Map R_{SIDIS}^H as function of z at $x = 0.4$ and $Q^2 = 4.0 \text{ GeV}^2$ (319 Hours)
- Map R_{SIDIS}^H as function of p_T^2 at $x = 0.3$ and $Q^2 = 3.0 \text{ GeV}^2$ (311 Hours)
- Add kinematics to map R_{SIDIS}^H for $Q^2 = 1.5\text{-}5.0 \text{ GeV}^2$ (88 Hours)



Removal of NPS magnet



- NPS magnet removal delayed until completed the lab-wide LOTO recertification
- NPS magnet stored in Testlab

Horizontal magnet installation



HB feet attachment

- Craning the Horizontal Bending magnet into place
- Difficult to install under the upper platform
- Large effort (help from Hall B) to sting the U-tubes for HB cryo

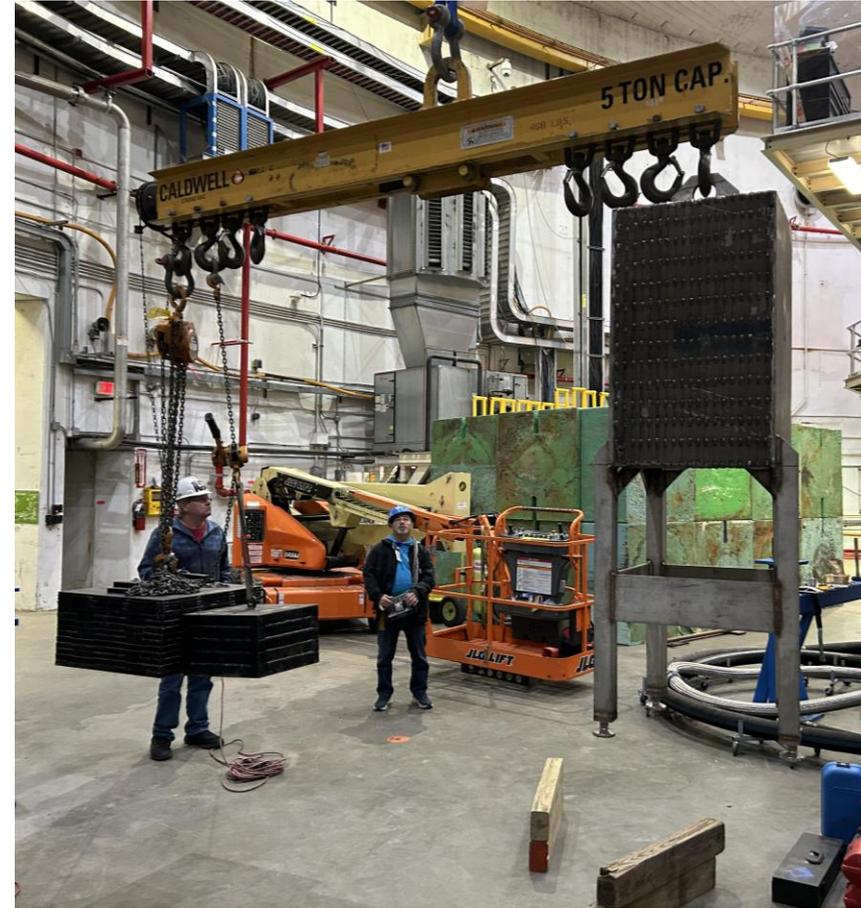


- Bellows between HB and Q1
- Collimator surveyed

SHMS installation

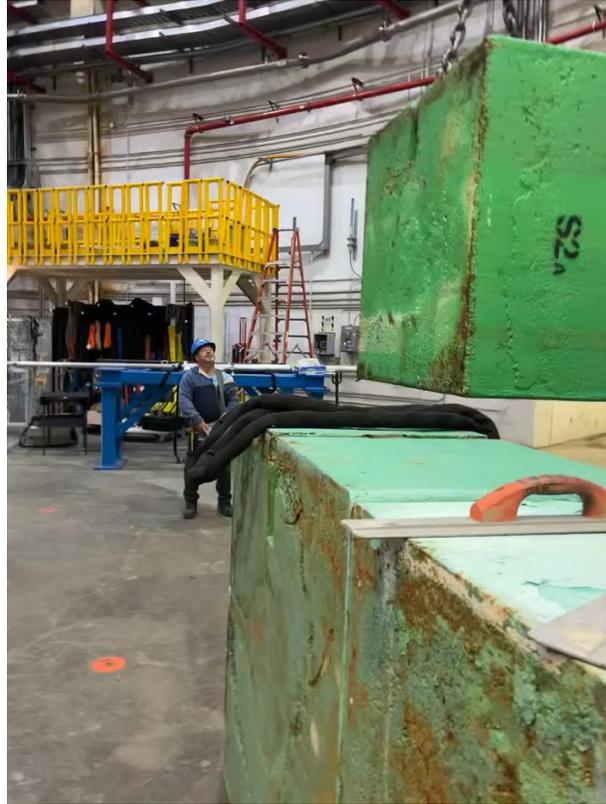


Lars Gustavson investigating cryo issues



Robert Wilkinson and Larry Carraway installing SHMS shielding that goes next to HB and under upper SHMS platform

LAD Electronic bunker



LCW repair



- Leak found in LCW supply line for the HMS/SHMS near the Hall wall
- LCW hoses ran underneath the Hall C floor
- Decision to replace both supply/return LCW with hoses running above ground.

Scattering chamber rotation and target installation

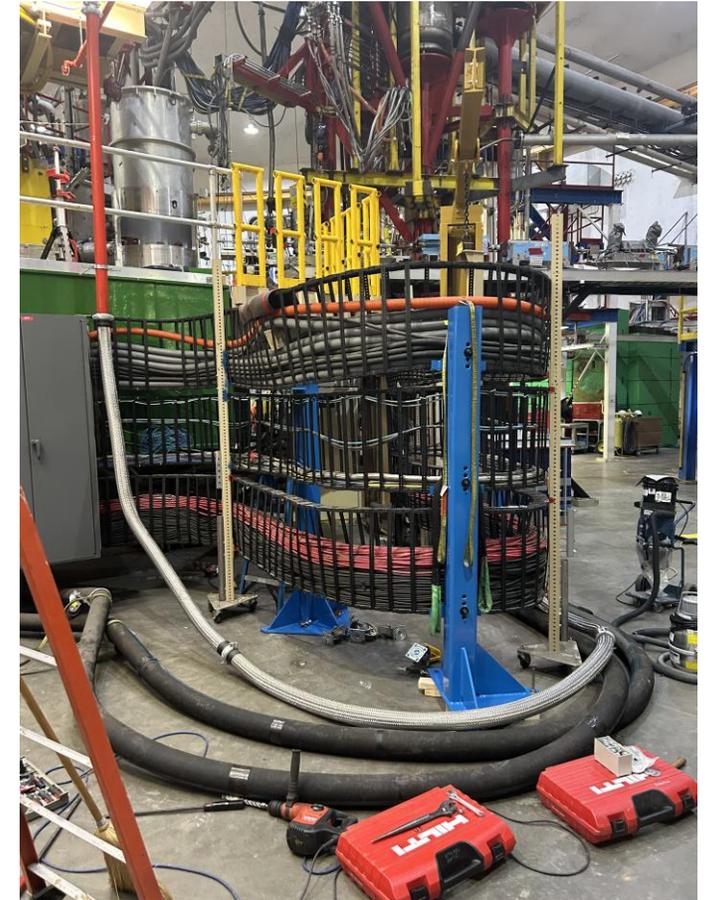


- Scattering chamber rotated so that the beam enters through a portal and exit through the HMS window
- Large SHMS opening allows the LAD detectors up to 157 deg
- LAD uses 20cm long target
- Target chamber planned to be closed up by Monday Jan 20th.

LAD installation: Clearing of the pivot area



Removed the jib crane that was on the pivot.

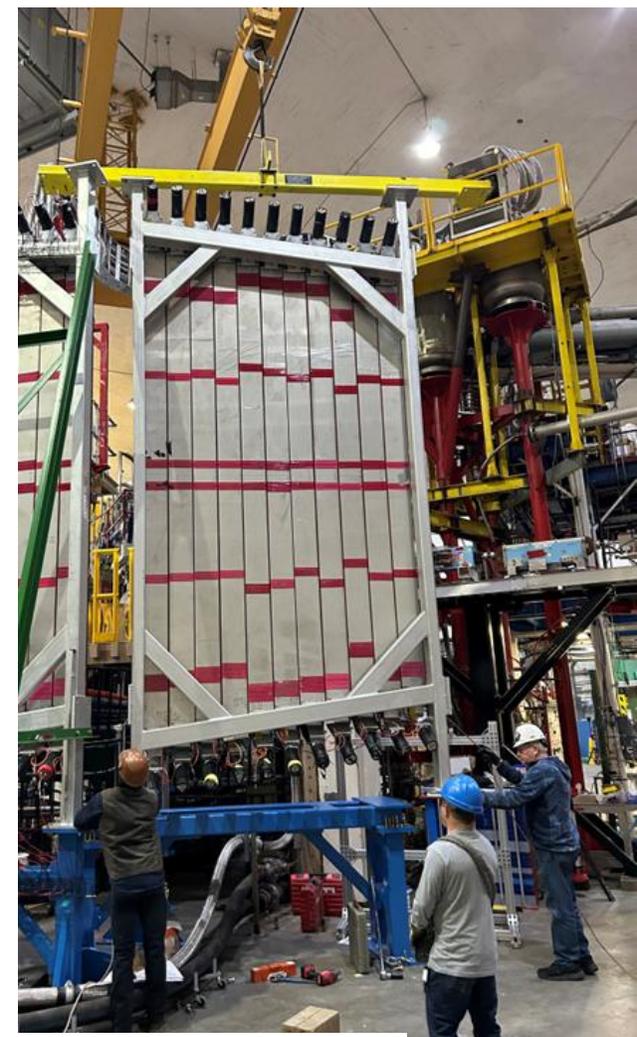
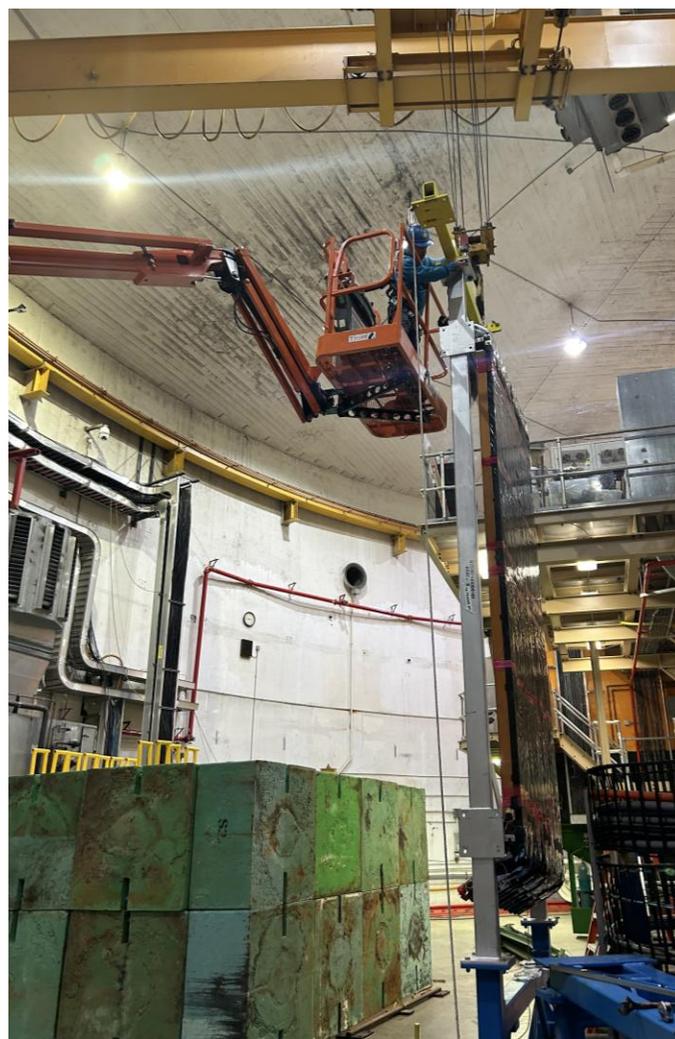


Needed to lower and rearranged the cables around the pivot

LAD installation

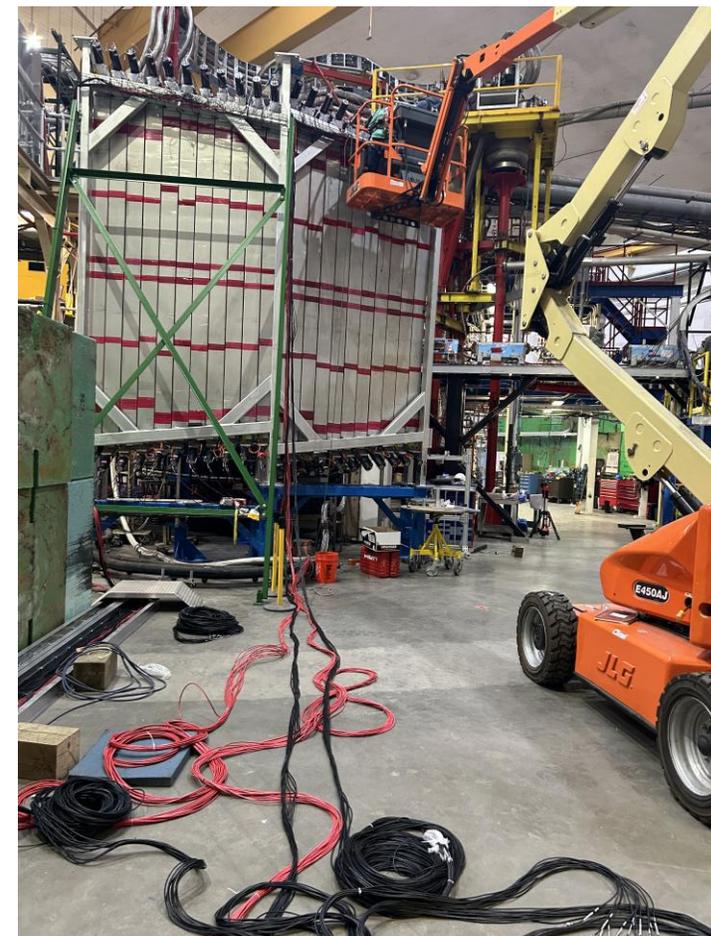


LAD scintillator planes in the ESB for transport to the hall



Installing the LAD scintillator planes

LAD installation



- Third plane installed
- Cabling up the LAD scintillator planes
- Fourth plane is in the hall.
- This week , install the blue stand and the two remaining planes.

Near future Hall C schedule

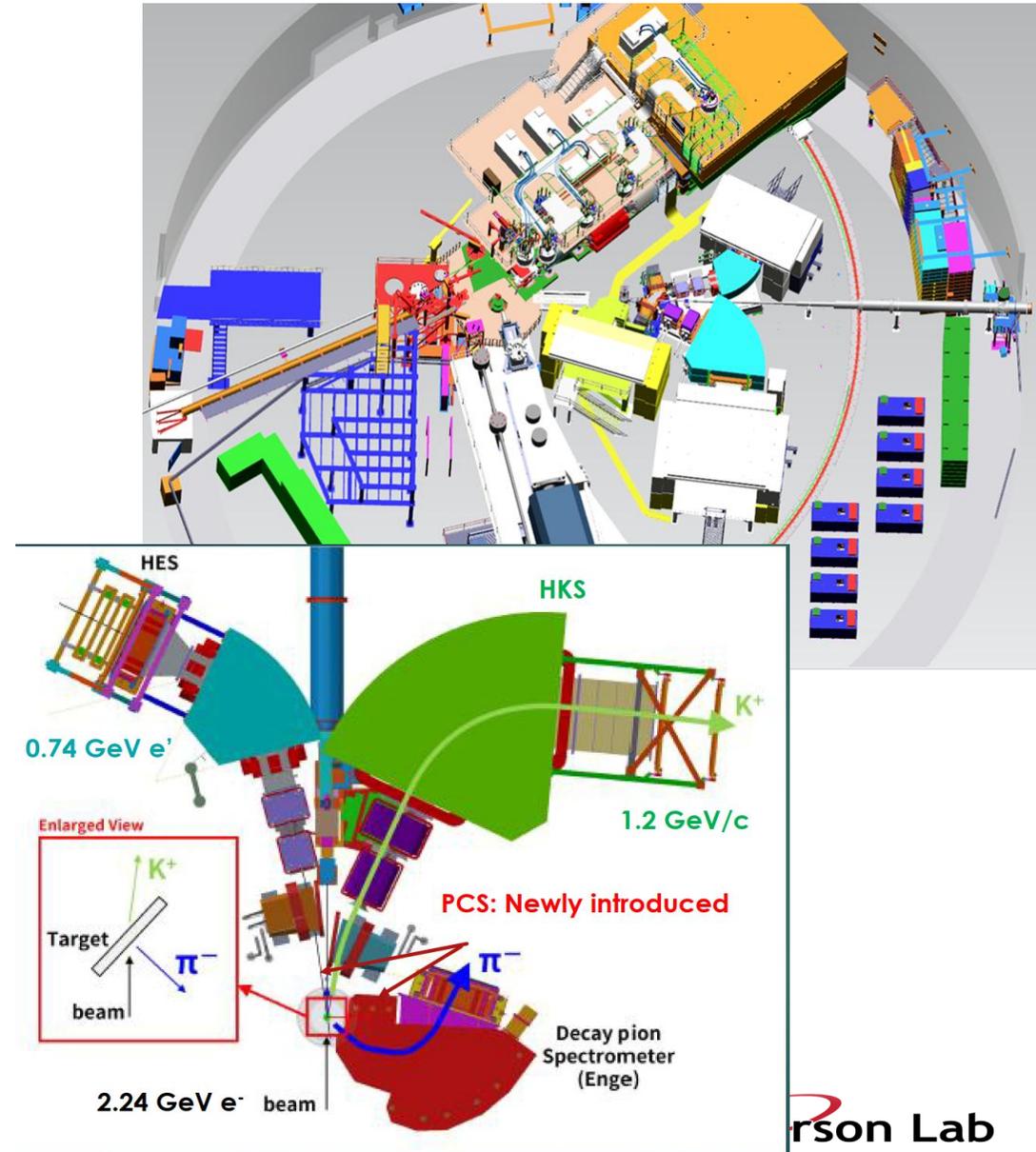
- FY26 assume 25 weeks and start in Nov 2025-May 2026. **(guess work for dates)**
 - Run HMS/SHMS experiments on the draft beam schedule
 - E12-06-107 Complete Pion Color Transparency
 - E12-14-002 Run standard beam energies for NucR
 - E12-22-001 N-Delta at low Q^2 , Special beam energy to match Hall B.
 - E12-23-001 VCS at low Q^2 , Special beam energy to match Hall B.
- FY27 assume 30 weeks and start in Sept 2026. **Not scheduled, speculation**
 - Run standard HMS/SHMS experiments Sept –Dec 2026. Possibilities:
 - Complete NucR and KaonLT non-standard beam energies
 - Complete VCS experiment
 - [E12-23-010](#) Color Transparency in Maximal Rescattering Kinematics
 - [E12-20-007](#) Backward-angle Exclusive π^0 Production above the Resonance Region
 - Hypernuclear installation in Jan 2027 – Aug 2027 (8 months)
 - Start Hypernuclear experiments in Sept 2027

Hypernuclear experiments

- Experiments had [ERR](#) in Nov 2024. Much work is needed to pass the ERR. See [report](#).
- Experiment PAC days. Total 149 PAC days. Assuming 50% efficiency that is 42 weeks. Two run periods.

Experiment	Title	PAC Days
E12-23-013	An isospin dependence study of the Lambda-N interaction through the high precision spectroscopy of Lambda hypernuclei	55
E12-24-011	Study of a triaxially deformed nucleus using a Lambda particle as a probe	28
E12-24-003	Studying Lambda interactions in nuclear matter with the $^{208}\text{Pb}(e,e' K^+)^{208}_{\Lambda}\text{Tl}$ reaction	42
E12-24-004	Study of charge symmetry breaking in p-shell hypernuclei	24
Run Group	High-resolution spectroscopy of light hypernuclei with the decay-pion spectroscopy (ENGE magnet)	N/A

- MOLLER will be running in Hall A during the time that Hypernuclear experiments would run



Schedule beyond Hypernuclear

- MOLLER running in Hall A (65uA at 5 pass) until 2030. Limits current to Hall C.
- Likely candidates are experiments using polarized ammonia targets
 - [E12-13-011](#) The Deuteron Tensor Structure Function b1
 - [E12-15-005](#) Measurements of the Quasi-Elastic and Elastic Deuteron Tensor Asymmetries
 - PR12-24-002 Exploring the Transition Region of QCD with the Proton's g2 Spin Structure Function
 - C2 approval, needs to go back to PAC
- Have an exciting list of approved experiments
 - Experiments using the NPS: Complete Hall A DVCS, Wide Angle Compton and Exclusive photoproduction
 - Polarization observables in WACS using the Compton Photon Source, polarized NH3 target, NPS and BigBite
 - The experiment: "A Search for a Nonzero Strange Form Factor of the Proton at 2.5 (GeV/c)²"
 - Experiments using the SBS/BB
 - SIDIS on polarized 3He target
 - Tagged DIS to measure the pion/kaon structure functions
- Number of Letters of Intent and new proposals
 - Attend the Tuesday morning session about new experiments.

Summary

- LAD installation
 - Big Thank You! to Jerry Nines (new WC), Larry Carraway (new DWC), Robert Wilkerson and Michael Bowman (new Tech). One man down for entire install.
 - Thanks to Paulo Medeiros for design and working on the LCW repair.
 - Have installed new LCW supply/return lines, delayed start of training SHMS magnets.
 - Target installation should be complete by Jan 20th.
 - 3 of 5 LAD planes installed. Look to install remaining 2 planes this week.
 - GEM planes are in the TestLab where they have been assembled and tested.
 - Downstream beamline being installed.
- Physics start date will be the earliest of Feb 14th.
- On the Scheduled Accelerator Maintenance, the Physics start date is Feb 28th.
- PAC will be July 21–25, 2025.
 - No official date, but I assume PAC proposals and LOI due 2 months earlier.
- Annual meeting of the Jefferson Lab User Organization from June 24-26, 2025

Social event at Traditions Brewing

- 5:30 to 7pm
- Light food will be provided
- Pay for your own drinks
- Non-alcoholic drinks available
- Music Bingo at 7pm

