

Hall-B Business Meeting

- Tracking of research output
- Hall-B related projects and subcontracts
- Reflections

Patrick Achenbach

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JLab Publications System

- Publications including conference proceedings **must be submitted into the JLab publications system** for approval—and approved—before submission to publisher and/or external distribution (*ie.* in arXiv)
- It is not necessary to publish DOE funded journal articles as open access
- All publications must be made available without any embargo or delay after publication
- All articles must include the DOE Contract Acknowledgment
- Theses **must be submitted into the JLab publications system** by students or advisors or the User Liaison office
- Soon, **the JLab Publications System will also capture data sets**, and submitters will be required to provide links to pages containing data access and descriptive metadata
- <https://misportal.jlab.org/sti/>

The screenshot shows the 'STI PUBLICATIONS - CREATE NEW PUBLICATION FORM' interface. On the left is a 'MENU' sidebar with links: Home, Create New, Papers Submitted by Me, Papers Authored by Me, Papers Pending My Signature, Search, and Provide Feedback. The main form has a tabbed interface with 'General Info' selected. The form fields include: 'Publication Month' (dropdown menu) and 'Publication Year' (dropdown menu set to 2025); 'Primary Institution' (text field with 'JLAB (Thomas Jefferson National Accelerator Facility, Newport News)' and a clear button); 'Division' (dropdown menu set to 'Exp Nuclear Physics'), 'Department' (dropdown menu set to 'Experimental Halls'), and 'Group' (dropdown menu set to 'Hall B'); and 'Type of Document' (dropdown menu set to 'Select One').

Tracking of Research Output

- NSAC Subcommittee for Charge on International Benchmarking of US Nuclear Science was looking at Hall-B website and brought **incompleteness/inaccuracies** to my attention (thanks to Haiyan Gao)
- JLab will start to **track time from data-taking to publication & academic theses**: this process will be included in ERR and linked to PAC proposals; currently, information is taken from websites
- Listing of Hall-B related theses at https://www.jlab.org/Hall-B/general/clas_thesis.html often not up-to-date, especially for non-CLAS Collaborations; supervisors are not always filling out the form
- **Can the collaboration introduce a better tool or a better mechanism to keep track?**
DOE Reports, PAC Jeopardies and ERRs will require this information in the future

Lab Directed Research and Development

▪ 2024-LDRD

- *“Low-Mass μ RWELL detector for high luminosity ($\sim 10^{37} \text{cm}^{-2} \text{sec}^{-1}$) experiments”,*
PI: Florian Hauenstein, running in the 2nd year
- *“Application of novel computational techniques for the extraction of the proton’s gravitational form factors and mechanical properties”,*
PI: Alexandre Camsonne, running in the 2nd year

▪ 2025-LDRD

- *“Real-Time Physics Analysis using AI Track Reconstruction Online”,*
PI: Gagik Gavalian, running in the 1st year

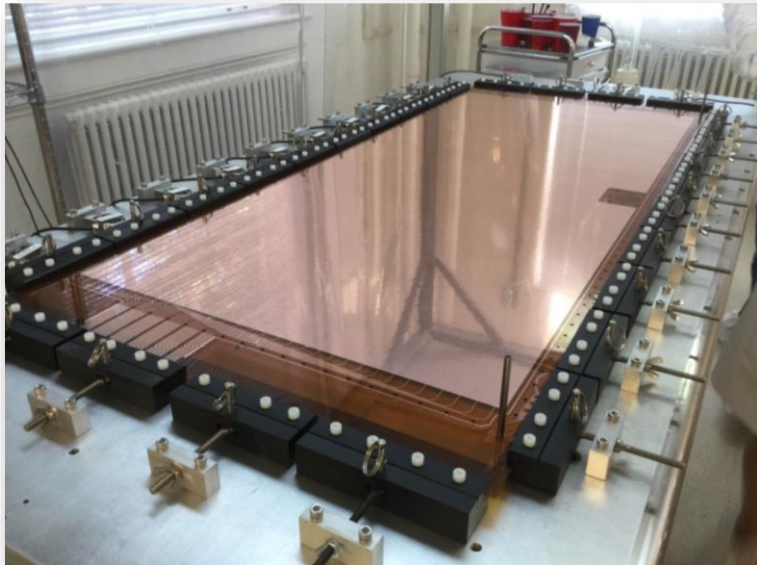
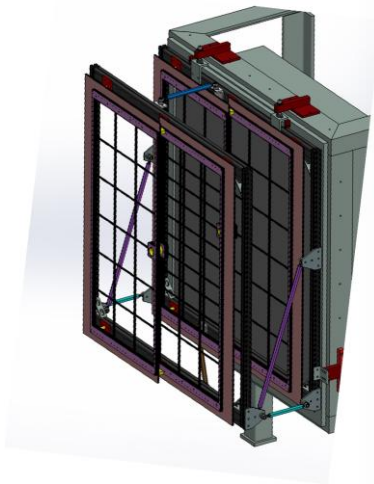
▪ 2026-LDRD

- *“Fast Particle Tracking using Optical Transition Radiation”,*
PI: Youri Sharabian, pre-proposal approved, proceeds to full proposal

Completed Capital Equipment Projects in Hall B

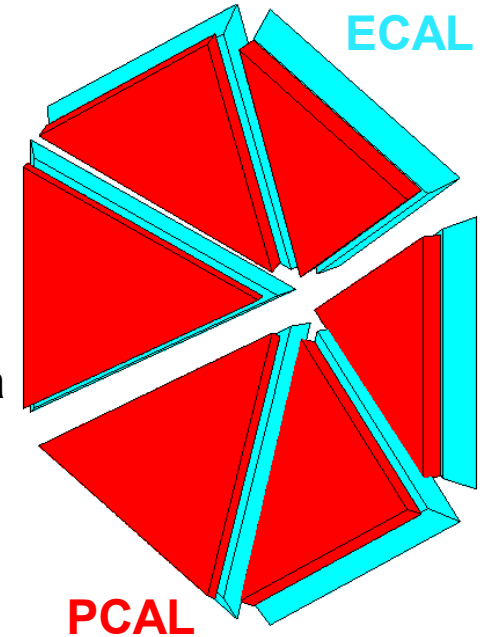
HBLAGD

- New precision measurements of the proton charge radius and electric form factor at low Q^2 (**PRad-II**) and a search for dark-sector particles (**X17**) require new tracking capabilities
- New **large-area GEM trackers** to significantly reduce detector efficiency fluctuations and allow for high-precision absolute efficiency determinations of each plane, and to reduce backgrounds



HBHRUC

- The **electromagnetic calorimeter** in Hall-B is used for all analyses with electrons and photons in the final state, e.g., **DVCS**, **DV π^0 P**, **TCS**, and **J/ ψ production**
- While pre-shower calorimeter (**PCAL**) was newly constructed for CLAS12, **ECAL** uses old e.m. calorimeter (EC) of CLAS
- ECAL PMTs are 30 years old
- New PMTs and bases provide a **large and uniform region** of reproducible ECAL calorimeter response



HILR1T

- PI: Stepan Stepanyan
- **Manufacturing of new tracking detectors** that will allow to reach 0.1% efficiency loss per charged particle and per nA beam current at CLAS12 design luminosity comprising μ RWELL detectors in front of the Region-1 drift chambers and associated electronics

Extension of scope:

- **Manufacturing of critical spares for the micromegas vertex tracker** to allow for a high performance of CLAS12 spectrometer operation comprising a total of 7 spares of 4 types, namely 2 for each of the three C-layers, and 1 spare for layer 5, a Z-layer, the necessary equipment, tools, and other hardware, especially for printed circuit board for readout and drift for each type

TRATAR

- PI: Chris Keith
- **Development of a transversely polarized target for CLAS12**, including its 5-tesla superconducting magnet, 1-kelvin refrigerator, and other ancillary equipment
- Necessary investments for transversely polarized target experiments including **beam line components, e.g. chicane magnets**

Extension of scope:

- Development and **outfitting of an R&D laboratory** for future polarized targets
- **Design and construction of a variable-temperature cryostat** for the irradiation of solid polarized target materials
- **R&D efforts towards a high-field polarized He-3 gaseous target** for CLAS12, including the eventual target construction

Subcontracts on Hall-B Budget

Positions:

- Subcontract with Lamar University to support a **joint professor** for research in Hall B
- Subcontract with MIT to support **postdoc Timothy Hayward** for work on CLAS12 data
- Subcontract (25% Hall-B) with UVa to support **scientist Huong Nguyen** for GEM detector work
- Subcontract to support **Eberhard Klempt**, retired from Bonn University, for analysis of CLAS photoproduction experiments leading to multiple publications

Detectors:

- Subcontract with University of Virginia to **fabricate 4 GEM detectors** for PRad-II/X17 Experiments
- Subcontract with CEA Paris-Saclay to **perform diagnostics of failed micromegas** detector components and to prepare the fabrication of 7 Micromegas detector spares
- Subcontract planned with CEA Paris-Saclay **to fabricate 7 Micromegas detector spares**