

PAC 52 Closeout

Note: The PAC report should be available around end of July.

Markus Diehl
12 July 2024



General remarks

- We received many **well-written documents** – thanks for the hard work that went into these.
- But a number of documents had deficiencies that significantly increased the workload of reviewers (PAC and TAC). Among these are
 - ▶ Logical inconsistencies between different parts of the document
 - ▶ Undefined notation (in plots, tables, text): define the symbols you use
 - ▶ Inconsistent notation (please: one symbol, one meaning)
 - ▶ Untraceable references or links
 - ▶ Missing or incomplete labels in plots
 - ▶ Inconsistencies between beam time requests in main document and cover sheet (if you spot this after submission, contact Douglas Higinbotham so that it can be rectified before the reviewers read the documents)
- This should **not happen** in any document (proposal, jeopardy update, or LOI)
- You **must** proof-read your document before submission.
If you are a co-spokesperson, you are co-responsible for the proposal.

General remarks

- The PAC expects that proposals contain estimates for both statistical **and systematic** uncertainties (both correlated and uncorrelated).
The basis of these estimates must be clearly documented.
This holds also for measurement that are statistics dominated (we need to understand that this is the case).
- To assess the physics reach of a proposal, it is often indispensable to have a comparison with **theory or model predictions**, including their uncertainty or plausible range of variation.
- Showing expected errorbars with central values lined up on a curve can be useful for illustration, but is generally not suitable for impact studies. A more realistic picture is obtained if central values are **randomized** according to their expected statistical uncertainties.
- It is important to distinguish between observables of a measurement and quantities derived from them: the latter often include additional uncertainties from theory (which a proposal may or may not be able to quantify).
Examples: GPDs, TMDs, gravitational form factors.

General remarks

- Overview tables and schematics of experimental setups (with labels!) are very helpful. (A picture can be worth a thousand words.)
- The PAC acknowledges the diligence of proponents in replying to questions by the readers.

However, the exchange between readers and proponents after proposal submission is meant to clarify specific questions.

It is **not** meant to fill in major gaps in a proposal – a proposal **must** contain all essential information.

- Reminder: Proposals cannot be updated once submitted.

Results: Proposals

PAC52 Results

NUMBER	TITLE	CONTACT PERSON	HALL	DAYS REQUESTED	DAYS AWARDED	SCIENTIFIC RATING	PAC DECISION
New Proposals							
PR12-24-001	Measurement of the Nuclear Dependence of $R = \frac{\sigma_L}{\sigma_T}$ in Semi-Inclusive Deep Inelastic Scattering	Dave Gaskell	C	5	7	A-	approved
PR12-24-002	Exploring the Transition Region of QCD with the Proton's g_2 Spin Structure Function	David Ruth	C	26			C2
PR12-24-003	Studying Lambda interactions in nuclear matter with the $280\text{Pb}(e,e' K^+)$ (208_Λ)TI reaction	Franco Garibaldi	C	42	42	A-	approved
PR12-24-004	Study of charge symmetry breaking in p-shell hypernuclei	Toshiyuki Gogami	C	24	24	A-	approved
PR12+24-005	A Dark Photon Search with a JLab positron beam	Bogdan Wojtsekhowski	B	55	55	A-	C1
PR12-24-006	GlueX-III: a path to the Luminosity Frontier in Hall D	Matthew R Shepherd	D	200	200	A	approved
PR12-24-007	Nuclear Dependence of Beam Normal Single Spin Asymmetry in Elastic Scattering from Nuclei	Ciprian Gal	C	9	9	A	approved
PR12-24-008	Inclusive Studies of 3N Short-Range Correlations	Burcu Duran	C	57			deferred
PR12-24-009	Exclusive electro-disintegration of tensor polarized deuterium	Nathaly Santiesteban	C	86			withdrawn
PR12-24-010	High-precision measurement of $\mu_p G_E^p/G_M^p$ at $Q^2 = 3.7 \text{ GeV}^2$ via Polarization Transfer	Andrew Puckett	A	2	2	A-	approved
PR12-24-011	Study of a triaxially deformed nucleus using a Lambda particle as a probe	Satoshi N Nakamura	C	28	28	A-	approved
PR12-24-012	Isospin structure of 3N short-range correlations and the nucleon structure functions in ^3H and ^3He	Shujie Li	C	53			deferred
PR12-24-013	An isospin dependence study of the Lambda-N interaction through the high precision spectroscopy of Lambda hypernuclei	Satoshi N Nakamura	C	62 (55)	55	A-	approved

Results: Returning proposal and Jeopardy review

NUMBER	TITLE	CONTACT PERSON	HALL	DAYS REQUESTED	DAYS AWARDED		PAC DECISION
Conditonal							
C12-23-009	Nuclear Charm Production and Short-Range Correlations	Or Hen	D	100			deferred
Jeopardy							
J12-24-RunGroupA	11 GeV Polarized Electrons on Liquid Hydrogen Target to Study Proton Structure, 3D Imaging, and Gluonic Excitations	Latifa Elouadrhiri	B	65	65		remain active
J12-24-RunGroupB	CLAS12 Run-Group B: electroproduction on deuterium with CLAS12	Silvia Niccolai	B	51	51		remain active
J12-24-RunGroupC	Run Group C Jeopardy Update Document	Sebastian Kuhn	B	40	40		remain active
J12-24-RunGroupH	CLAS12 Run-Group H: electroproduction on transversely polarized proton with CLAS12	Marco Contalbrigo	B	110			change status to C2
E12-11-006	Heavy Photon Search Experiment	Tim Nelson	B	105	105		remain active
E12-14-001	The EMC Effect in Spin Structure Functions	William Brooks	B	55	55		remain active

As in previous years, the PAC received several proposals aiming at studying **short-range correlations in nuclei**. This documents the continued interest in this physics. The committee feels that it may be beneficial for the lab to organize a forum (for instance a working group or a series of meetings) that would **join interested experimental groups and theorists**, with the aim of devising a strategy to bring this important field forward, regarding **key measurements, observables, and their theoretical interpretation**.

Run group additions

- E12-12-002A
Hall D
Measurement of α_{-} for $\Lambda \rightarrow p \pi^{-}$ Endorsed
- E12-10-006F and E12-11-007B
Hall A
Measurement of the Unpolarized SIDIS Cross Section from a ^3He Target with SoLID Withdrawn
- E12-20-013A and E12-15-008A
Hall C
High-resolution spectroscopy of light hypernuclei with the decay-pion spectroscopy

Additional beam time cannot be part of a run group proposal and must be requested in a separate proposal.

The part of the proposal that does not require new beam time is endorsed.

Letters of Intent

- We received 11 Letters of Intent – too many to discuss in detail here. Feedback on these will be given in the PAC report.
- It is lab policy that an LOI establishes a claim to a physics idea.

This is only meaningful if the LOI contains details on the physics and the measurement that is sufficient to define the envisaged experiment in terms of impact and feasibility. A mere sketch is not enough.

Thanks to

- all spokespersons and collaborations
- all PAC reviewers,
Yordanka Ilieva (JLUO Chair) and Matthew Shepherd (JLUO Chair-elect)
- JLab management and scientists
especially Thia Keppel, Douglas Higinbotham, Patrizia Rossi,
and all those who provided the TAC physics and theory reports
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This was my last term on the PAC.
Thanks to all I worked with on this committee during the last six years,
and thanks for the hospitality I enjoyed every time.

I sincerely wish all the best to the Lab and its Users.
Good bye, and stay safe.