

Jeopardy in the 12 GeV Era

September 2016

Rationale

In order to help manage the backlog of nuclear physics experiments at Jefferson Lab, we will implement a Jeopardy program similar to that used in the 6 GeV era of CEBAF. The basic principle is that experiments that remain approved on the books for extended periods of time need to be periodically reevaluated by the PAC. We currently have 70 approved experiments that will require 6-10 years of full operation of CEBAF to complete. By 2020 we may have scheduled about $\frac{1}{2}$ of the presently approved experiments, more or less depending on which Hall they are in, equipment and CEBAF availability, and the possible scheduling of new proposals that may be approved in the next 4 years. So we will need to initiate the program on that time scale, but with so many proposals to consider we will need a phased approach. We propose to begin in 2019 and review the presently approved proposals that have not been scheduled over a period of several years with the goal of reaching a steady state in 2024 when any proposal that has not been scheduled for 4 years will be considered in jeopardy. Hall B will be considered by run groups, so there are currently only 11 distinct run groups to review. This can be handled during 1 PAC meeting, together with Hall D and the 2 non-CEBAF experiments. Halls A and C have together more than 40 approved experiments, so it is likely we need 2 PAC meetings to handle the workload. Then we will need (hopefully only) one meeting to cover the proposals approved during 2016-2019. So it is estimated that we will require 4 successive PAC meetings to fully deal with the backlog and reach a steady state.

Review Process

PAC meetings after the start of the Jeopardy process will be considering both new proposals and resubmitted Jeopardy proposals. Resubmitted proposals in Jeopardy will be requested to submit updates to their original proposals and give a presentation before the PAC. The PAC will review the updated proposals and reconsider their approval status, grade and number of approved PAC days. The spokespersons of these experiments will be notified directly that their experiments will be reviewed under jeopardy along with specific instructions for resubmission.

Proposed Phased Start

The process of Jeopardy will begin with the PAC meeting in 2019. We will consider proposals in Halls A and C that received approval in 2006 and 2007 and that have not been (fully) run or scheduled yet. While these were graded more recently in 2010-11, their approval status has not been addressed since 2006-7. Proposals that remain approved after consideration at this meeting will be granted 4 more years to be scheduled before returning for Jeopardy in 2023.

Based on the presently anticipated run schedule, we expect that the following proposals may be considered in the 2019 round of Jeopardy:

Proposal	Hall	Title	Contact Person	PAC days	Rating	
E12-06-101	C	Measurement of the Charged Pion Form Factor to High Q ²	G. Huber*	52	A	Run in 2018/19?
E12-06-104	C	Measurement of the Ratio R= σ_L/σ_T in Semi-Inclusive Deep-Inelastic Scattering	R. Ent*	40	A-	
E12-06-105	C	Inclusive Scattering from Nuclei at $x > 1$ in the quasielastic and deeply inelastic regimes	D. Day*	32	A-	Run in 2018/19?
E12-06-107	C	The Search for Color Transparency at 12 GeV	D. Dutta*	26	B+	Run 35% in 2017?
E12-06-110	C	Measurement of Neutron Spin Asymmetry A _{1n} in the Valence Quark Region Using an 11 GeV Beam and a Polarized ³ He Target in Hall C	X. Zheng*	36	A	Run in 2018/19?
E12-06-114	A	Measurements of Electron-Helicity Dependent Cross Sections of Deeply Virtual Compton Scattering with CEBAF at 12 GeV	C. Hyde*	100	A	Run 50% in 2016
E12-06-121	C	A Path to 'Color Polarizabilities' in the Neutron: A Precision Measurement of the Neutron g_2 and d_2 at High Q^2 in Hall C	B. Sawatzky*	29	A-	
E12-06-122	A	Measurement of neutron asymmetry A _{1n} in the valence quark region using 8.8 GeV and 6.6 GeV beam energies and Bigbite spectrometer in Hall A	B. Wojtsekhowski*	23	A-	
E12-07-105	C	Scaling Study of the L-T Separated Pion Electroproduction Cross Section at 11 GeV	T. Horn*	36	A-	Run in 2018/19?
E12-07-109	A	Large Acceptance Proton Form Factor Ratio Measurements at 13 and 15 (GeV/c) ² Using REcoil Polarization Method	B. Wojtsekhowski*	45	A-	

In 2020, we propose that the Jeopardy process will be applied to the presently approved Hall B program. Run groups approved prior to 2017 that still have beamtime remaining on the books in 2020 will be considered in Jeopardy, unless they are on the then current schedule for running. We might expect this will include the current Run Groups A, B, C, D, E, G, H, I, K (note: includes HPS as run group I), but of course it depends on the actual run schedule in the next 5 years. We would also consider currently approved Hall D experiments and non-CEBAF experiments that are not yet scheduled for Jeopardy at this PAC meeting.

The scenario beyond 2020 is more speculative, since we do not know what will have been scheduled by then and what CEBAF availability will have been. But we can sketch out a rough outline that would get us to a steady state around 2024.

In 2021, we would return to Halls A/C. The likely scenario is that proposals that have been approved during 2009-2011 but have not been scheduled will be considered in Jeopardy. This would include about 20 currently approved proposals, and one can expect that about half of them would have run by 2021, so the PAC would have to consider about 10 proposals in Jeopardy.

In 2022 we could address A/C again for the years 2012-2016. There are about 10 proposals currently, and again at least half should have run so this seems manageable.

In 2023 we would consider all proposals approved during the 2016-2019 time frame, plus any proposals still in Jeopardy from the 2019 meeting.

Of course, the details will depend upon the experiments that do get scheduled, but this should get us caught up on current proposals by 2023 or so. We will then transition to a 4 year schedule where proposals that have been approved for 4 years or more but are not scheduled will be considered in Jeopardy. It should be noted that this is only a tentative outline to provide an impression of what is to come, and the details may change as the program develops.