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Proposal #: PR 04-002 **Hall A**

Title: Hadronization in Nuclei by Deep Inelastic Electron Scattering

Contact Person: Kebin Wang (UVa)

Beam Time:

Beam days requested: 15

Tune-up (incl. calibrations) time included in request: 1.5

Basic Equipment

Beam parameters:

Energy:	6 GeV	yes
Current:	100 μA	yes
Polarization:	0 %	yes

Targets:

Nuclei:	C, Cu, W, 15 cm LH2 and LD2	yes
Rastering:	yes	yes

Spectrometers:

both HRS	standard setup	yes

Special Requirements: none

Comments:

Cooling may be required for the solid targets to be able to handle beam currents of 100 mA. Because tungsten generally comes in a sintered form, in which it can not stand a high current, it might be advisable to use platinum instead.

Proposal # PR-04-007 **Hall: A**

Title: Precision Measurement of the π^o near Threshold: A Test of Chiral QCD Dynamics

Contact person: Richard Lindgren (UVa)

Beam time:

Beam days requested: 16

Tune-up (incl. calibrations) time included in request: 5

Basic Equipment

Beam parameters:

Energy:	0.8 - 4.0 GeV	yes
Current:	5 μA	yes
Polarization:	0 %	yes

Targets:

Nuclei:	10 cm LH_2	no
Rastering:	yes	yes

Spectrometers:

septum magnets		no
both HRS	standard setup	yes
Big Bite	dedicated detector	no
RCS lead-glass calorimeter	Big Bite calibration	no

Special requirements:

1. The proposed 10 cm long target cell with 10 μm walls will represent a serious R&D project.

2. Assumes helium bag inside Big Bite and MWDCs as detectors

3. Requests RCS calorimeter, but this is now part of the BigCal calorimeter

Comments:

None

Proposal # PR-04-011 **Hall:** **A**

Title: Photoproduction of Q^+ via the g + d -> Q^+ + L Reaction

Contact person: Stephen Wood (JLab)

Beam time:

Beam days requested:	7
Tune-up (inc. calibrations) time included in request:	2

Basic Equipment

Beam parameters:

Energy:	1.2 GeV	yes
Current:	50 μA	yes
Polarization:	0 %	yes

Targets:

Radiator	Cu 6 % X0	yes
Nuclei:	15 cm LD2	yes
Rastering:	yes	yes

Spectrometers:

HRSL	standard setup	yes
plastic scintillator array		no
Big Bite	with aerogel	no

Special requirements:

1. Requires aerogel detector in Big Bite.

2. Requires (undefined) array of plastic scintillators from GEn or SRC experiments

Comments:

Proposal # PR-04-012 **Hall:** **A**

Title: High Resolution Study of the 1540 Exotic Sate

Contact person: Bogdan Wojtsekhowski (JLab)

Beam time:

Beam days requested: 47

Tune-up (inc. calibrations) time included in request: 0

Basic Equipment

Beam parameters:

Energy:	2.0, 4.5, 6.0 GeV	yes
Current:	100 μA	yes
Polarization:	0 %	yes

Targets:

Nuclei:	Be, C, 50 cm gaseous deuterium	no
Rastering:	yes	yes

Spectrometers:

septum magnets		no
HRSL	standard setup	yes
HRSR	standard setup	yes
Big Bite spectrometer		no
plastic scintillator array		no

Comments:

1. Requires development of

a 50 cm long gaseous deuterium target (of which the proposed design with 25 μm thick Al windows will not work and the alternative of 100 μm thick Be windows constitutes a major R&D project)

a new scattering chamber for out-of-plane BigBite positioning

installation of neutron detector (of which the origin is not clear)

2. Provide an estimate of the accidental coincidence rate in BigBite

Proposal # PR-04-015 **Hall:** A

Title: Precision Measurement of Longitudinal and Transverse Response Functions of Quasi-Elastic Electron Scattering in the Momentum Transfer Range 0.55 GeV/c < q < 1.0 GeV/c

Contact person: Seonho Choi (Temple)

Beam time:

Beam days requested: 29

Tune-up (inc. calibrations) time included in request: 3

Basic Equipment

Beam parameters:

Energy:	0.4 - 3.6 GeV	yes
Current:	50 μA	yes
Polarization:	0 %	yes

Targets:

Nuclei:	^{4}He, ^{12}C, ^{56}Fe, ^{208}Pb	yes
Rastering:	yes	yes

Spectrometers:

HRSL	standard setup	yes
HRSR	standard setup	yes

Special requirements:

None

Comments:

1. Requires so many frequent energy changes which will impact operations in the other Halls to such a degree that it will have to be scheduled for single-hall running.

Proposal # PR-04-018 **Hall:** A

Title: Elastic Electron Scattering off ^{3}He and ^{4}He at Large Momentum Transfers

Contact person: Makis Petratos (Kent State)

Beam time:

Beam days requested:	36
Tune-up time included in request:	0

Basic Equipment

Beam parameters:

Energy:	0.8 - 4.4 GeV	yes
Current:	100 μA	yes
Polarization:	0 %	yes

Targets:

Nuclei:	20 cm ^{3}He, ^{4}He	no
Rastering:	yes	yes

Spectrometers:

HRSE	standard setup	yes
HRSH	standard setup	yes

Special requirements:

none

Comments:

1. Requires many frequent energy changes which in combination of the use of the high-power Helium target impacts operations in the other Halls to such an extent that it might be scheduled for single-hall running.
2. Further design work is needed for the 20 cm long cells, since the support rods in the present configuration interfere with the acceptance.
3. This proposal can only be presented to the PAC if the requisite lists of resources and beam requirements has been provided in a timely fashion.