Report of the
July 13–15, 1998 Meeting
of the
Jefferson Lab
Program Advisory Committee

PAC14 —

The Thomas Jefferson National Accelerator Facility (Jefferson Lab) is a user facility managed by the Southeastern Universities Research Association (SURA), Inc., for the U.S. Department of Energy (DOE) under contract DE-AC05-

For more information or copies of this report contact:
Thomas Jefferson National Accelerator Facility
User Liaison, MS 12B
12000 Jefferson Avenue
Newport News, VA 23606
Phone: (757) 269-7586 / Fax: (757) 269-7003
E-mail: users@jlab.org
WWW: http://www.jlab.org/exp_prog/PACpage/pac.html

DISCLAIMER

This report was prepared as an account of work sponsored by the United States Government. Neither the United States, nor the United States Department of Energy, nor any of their employees makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, mark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

August 1998

Dear Members of the Jefferson Lab User Group,

The experimental nuclear physics program at Jefferson Lab is in full swing. A total of 1 experiments and 144 days run have been completed. Magnet energy has pushed to 5 GeV with the goal of running experiments at 5 GeV by Summer. The Hall A group has achieved a data acquisition duty factor of 100 times better than last Fall. The Hall B vir compton is running fine and the polarized target is scheduled for a late-S late June, Hall C Experiment 93-026 began commissioning of the 240-channel neutron detector and checkout of the EMS. In late July, with the polarized target, th polarimeter, and the magnetic chicane operational, full commissioning of the polarized target is performing as expected and neutrons are detected in coincidence with electron with a large signal to noise ratio. The experiment is now poised for product high-beam polarization becomes available. In addition, the Free-Electron Laser program is off to an exciting start. Thus far the laser has delivered IR 300 W, at more than 1 W, surpassing the 11-W mark set by a free-electron laser at Vanderbilt University and their own mark 150-W set on June 17.

The User Group met in June to refine the goals established at the 1994 EBAF Workshop "Higher Energies" with a focus on a 10-12 GeV future for Jefferson Lab. Upgra additions to the present halls required to meet the physics opportunities of the 12-(considered as well as an introduction of ideas for an additional experimenta

The Jefferson Lab Program Advisory Committee (PAC14) met July 13-15, 1998 to hear details on the progress of the Accelerator and the three Halls, all three plans for all three Halls, new and updated proposals and letters-of-intent, and review the Body's cu Physics Program.

On August 3-5, a subcommittee of the Nuclear Science Advisory Committee (NSAC) visited Jefferson Lab to review the science programs here in medium-energy physics. The panel heard presentations and saw first-hand the accelerator and reviewed experime They also heard presentations from the User regarding the experimental program, and w given the opportunity to interact with students, grad students, and post docs. Based on this review, the User Group Board of Directors and myself to which the pressures were apparent, the need to support our thoroughly addressed and recognized. While panel did not have a formal close-out, we expect to hear the committees findings around th middle of September.

The Science and Technology Review for Jefferson Lab is scheduled for mid-S and SURA will review the lab's performance objectives and key indicators wit contract with the DOE.

Attached is the PAC14 Report. I want to thank Brad Filippone and the members of the P for their efforts on behalf of Jefferson Lab and its User Community, and for the PAC's thoughtful deliberations on the physics program. I also wish to thank you, t efforts on the proposals, updates and letters-of-intent, and I look forwa publications informing the scientific community of the exciting results Jefferson Lab experimental program.

Sincerely,

Hermann Grunder,
Director

Report of the July 13-15, 1998 Meeting of the Jefferson Lab Program Advisory Committee (PAC14)

Introduction

The Jefferson Lab Program Advisory Committee held its 14th meeting on 13-15, in CEBAF Center. PAC14 met also at the Williamsburg Lodge in Williamsburg, Virginia to discuss the Lab's current approved Few-Body Program. PAC14 membership is given in Appendix A. In response to the charge (Appendi director, Dr. Hermann Grunder, the committee reviewed and made recomme on seven new/updated proposals and three letters-of-intent.

Nathan Isgur and Larry Cardman reported on recent accelerator develo outlined progress in the experimental halls. The accelerator's full de microA at 4 GeV was delivered to Hall C. The evolution to higher e possible by the excellent performance of the super-conducting cavitie with first physics data taken at 4.4 GeV and a 5 GeV test completed. A phy 5.5-6 GeV is expected to begin late in 1999.

Continued progress was evident in the experimental program with data pro presented from all three halls. Hall A completed the first virtual C experiment and in a major success carried out the first data run for t experiment in elastic scattering from the proton. The performance of in terms of minimal helicity correlated beam characteristics a improvements in the polarized electron source was exceptional, like publishable result from this initial test run. This demonstration st parity violation holds promise as a precise tool to explore the structure o nuclei at Jefferson Lab.

For Hall B, initial electron-proton scattering distributions were pre cases exceed the world's data after only a few shifts of analyzed dat the photon tagger has also recently been obtained. In Hall C, the 4 pion form-factor measurement was completed. Also, the second large installati experiment using a polarized Na, is preparing for beam. These successes in the halls along with the apparent achievement of reliable three-hall r productive future (subject to funding) for the lab.

Few-Body Physics Workshop

A new format was initiated at PAC meeting whereby a single scientific top few-body physics in this case — was reviewed. The review involved recent theoretical and experimental developments (provided by R. Sch Ent respectively). A summary of the approved few-body program in ea then presented by the Hall leaders. This was followed by an extensi discussion where key scientific questions were formulated and then m approved program, in order to identify possible future experimental o the Lab's program. A short report and summary from this meeting will be appended to this report at a later date, as Appendix C. Overall, the PAC finds the format (short off-site retreat) to be highly effective in providing a broad overview of the and summarizing the status and opportunities within a particular physi

Report of the July 13-15, 1998 Meeting of the Jefferson Lab Program Advisory Committee (PAC14)

General Comments and Recommendations

Overall the PAC was impressed with the progress with the accelerator
Hall operation and higher energies. The PAC was also pleased to see the publicati
of the first Jefferson Lab results with several other papers likely t
also clear that having passed through the initial commissioning phas
the lab has chosen to pursue the highest-rated physics. This ambitious
in all three Halls running polarized beam on polarized targets this fa

This was the first PAC meeting where a limitation on the number of hours
approved was recommended by management. The goal of this limitation is
the significant backlog of experiments to be run. It should be r
limitation is only a guideline and can be exceeded for sufficiently
physics.

During a discussion of experimental jeopardy, initial plans for future
were outlined. It is expected that the PAC will hear from all Hall C e
are in Jeopardy at the next PAC meeting. The corresponding collaborati
contacted by the Laboratory and given guidelines for updating their pr
Jeopardy, which begins in summer 2000, will likely need to be split (p
lottery) over two PAC meetings. For Hall B, where jeopardy begins in
experiments within run groups (eg, e1, g1, etc.) will likely be review

The reports and PAC recommendations for the reviewed proposals and let
intent are given in Appendices D and E. The tables on page 6 summarize
PACs 4-14.

_____

Brad Filippone
Chair, Jefferson Lab Program Advisory Commi

Date: _____

A P P E N D I C E S

A. PAC14 Membership
B. Charge to PAC14
C. PAC14 Recommendations
D. Individual Reports for PAC14 Proposals
E. Individual Reports for PAC14 Letters-of-Intent
F. Approved Experiments, PACs 4-14, Grouped by Physics Category

(To access Appendix F, type http://www.jlab.org/exp_prog/PACpage/ in your web browser.)

Totals for PACs 4-14

	Experiments Recommended for Approval	Experiments Recommended for Conditional Approval	Totals
Experiments	105	15	120
Authors	659	56	715
Institutions	131	7	138
Countries	21		21

Totals of Approved Experiments by Physics Topics for PACs 4-14

Topic	Number	Hall A	Hall B	Hall C
Nucleon & Meson Form Factors & Sum Rules	14	6	3	5
Few Body Nuclear Properties	22	11	6	5
Properties of Nuclei	18	4	8	6
N* & Meson Properties	33	6	20	7
Strange Quarks	18	4	9	5
Total	**105**	**31**	**46**	**28**

Approved Days and Conditional Approved Experiments by Hall

Hall	Approved Experiments				Conditionally Approved Experiments
	No. of Exps Completed (full/partial)	Days Run	No. of Exps in Queue	Days to be Run	
A	2 / 2 x 1/2 / 1 x 1/4	64	28	609	6
B	1 /13 x 0.5 / 6 x .10 / 1 x .50	29	43	410	6
C	7 / 2 x1/2	144	20	434	4
Total	**10 / ~4**	**237**	**93**	**1453**	**16**

Appendix A

PAC14 Membership

BRAD FILIPPONE (Chair)
California Institute of Technology
Kellogg Radiation Laboratory
Pasadena, CA 91125
Ph/Fax: (626) 395-4517/564-8708
brad@krl.caltech.edu

ENZO DESANCTIS
Laboratori Nazionali Do Frascati
Casella Postale 13
00046 Frascata (Rome) Italy
Phone/Fax: (217) 333-8079/9819
desanctis@Inf.infn.it

FRANCIS CLOSE
DivAS/CERN
1211 Geneva 23
Geneva, Switzerland
Phone/Fax: +41-22-767-8875/8780
Frank.Close@cern.ch

DON GEESAMAN
Argonne National Laboratory
Physics Division, Bldg 203
9700 South Cass Avenue
Argonne, IL 60439
Phone/Fax: (708) 252-4059/3903
geesaman@anlphy.phy.anl.gov

HAROLD JACKSON
Physics Department
Argonne National Laboratory
Argonne, IL 60439
Phone/Fax: (630) 252-4013/3903
hal@anl.gov

ROBERT LOURIE
Renaissance Technologies Corp.
600 Rt. 25A
East Setauket, NY 11733
Ph/Fax: (516)-444-7000/7074
lourie@rentec.com

JACQUES MARTINO
DAPNIA/SPhN
CEA Saclay
91191 Gif-sur-Yvette, CEDEX,
Phone/Fax: 33 01 69 08 745
jmartino@cea.fr

VIJAY PANDHARIPANDE
University of Illinois
1110 W. Green Street
Urbana, IL 61801
Phone/Fax: (217) 333-8079/9
vijay@rsm1.physics.uiuc.ec

CHARLES PRESCOTT
SLAC, Mail Stop 78
2575 Sand Hill Road
Menlo Park, CA 94025
Phone/Fax: (660) 927-2856
prescott@slac.stanford.edu

BERTHOLD SCHOCH
Physikalisches Institut
Universitaet Bonn
D 53115 Bonn, Germany
Phone/Fax: 49-228-73-2344/351
schoch@physik.uni-bonn-de

STEVEN VIGDOR
Indiana University
Department of Physics
Swain West 117
Bloomington, IN 47405
Phone/Fax: (812) 855-9369/6645
vigdor@iucf.indiana.edu

Appendix B

Charge to PAC14

Following is the charge to PAC14 from Jefferson Lab Director, Hermar

Jefferson Lab requests that PAC14:

1) Review proposals, extensions and updates and provide advice for t
merit, technical feasibility and resource requirements.

2) Recommend one of four actions on each proposal, extension or upd
* approval,
* conditional approval status pending clarification of special
* deferral, or
* rejection.

3) Provide a scientific rating and recommended beam-time allocat
proposals recommended for beam-time.

4) Provide comments on letters-of-intent.

5) Comment on the Hall running schedules.

As of this meeting we are re-initiating the formal use of the PA
body on the directions of the overall scientific program of the
was done previously in the initial planning for the present c
experimental equipment). We will begin with a review of the pres
program in the subfield of few body nuclear properties. We add a
sixth item to the charge of PAC14:

6) Review the scientific opportunities accessible through CEBAF's capabilities in
the area of few body nuclear properties. Are there open questions in th
subfield addressed optimally by the presently approved experime
extensions to or modifications of presently approved experime
clearer answers to these questions? Finally, are there important
not addressed by approved experiments that should be added to the

APPENDIX C

PAC14 Recommendations

*Pac Action	Class/ Days		
A	B+/16	**E-98-101**	**Spin Polarization in Kaon Electroproduction**
R		**PR-98-102**	**A Measurement of Dispersive Effects in The Elastic Scattering of Electrons from Polarized ^{3}He**
D		**PR-98-103**	**Measurement of $p(\vec{e},e'\vec{p})\phi$ and the Strangeness Content of the Proton**
	/+2	†**PR-98-104**	**Measurement of the Polarized Electron Beam Aymmetry on Exclusive Reactions In Nuclei with CLAS**
D		**PR-98-105**	**A Precision Measurement of the Neutral Pion Lifetime via the Primakoff Effect**
D		**PR-98-106**	**K$^+$ Photoproduction and Λ^0 Polarization for E$_\gamma$= 3 to 6 GeV**
A	B+/+0	**E-98-107**	**Deeply Virtual Electroproduction of Vector Mesons**
A	B+/21	**E-98-108**	**Electroproduction of Kaons up to Q^2 = 3 (GeV/c)**
A	B+/13	**E-98-109**	**Photoproduction of ϕ Mesons with Linearly Polarized Photons**

* A=Approve, C=Conditionally Approve, D=Defer, R=Reject

= **Concurrent running with already approved Hall C experiment.**

† **PR98-104 was not reviewed by the PAC but was approved by laboratory Management as a 0 day add on to the e2 run group and awarded +2 days by Laboratory management decision to carry out the proposed research and add beam polarization measurements (2 days total) to the entire e2 run group.**

Appendix D

Individual Proposal Reports

Proposal: E-98-101
Scientific Rating: B+
Spokesperson: O.K. Baker
Title: Spin Polarization in Kaon Electroproduction

Motivation:

This experiment proposes to measure spin observables in K^+ electroproduction. Both spin transfer and induced polarization will be employed to eluci electroproduction process.

Measurement and Feasibility:

The self-analyzing property of the _ decay will allow its polarizatio determined from measurement of the decay proton angular distribution. The pro detected simultaneously with the EMBED Equation.2 SOS, a technique that has been demonstrated in E-93-018.

Issues:

The issues raised by PAC 12 appear to have been adequately addressed. Whil PAC remains skeptical about the experiment's ability to determine the should provide important information on the kaon electroproduction pro

Recommendation:
The experiment is approved for 16 days in Hall C.

Appendix D

Individual Proposal Reports (Continued)

Proposal: PR-98-102
Spokespersons: K. A. Assamagan, R. Ent, J. H. Mitchell
Title: A Measurement of Dispersive Effects in Elastic a
of Electrons from Polarized EMI

Motivation:

The aim of the experiment is to obtain data on dispersive correctic photon exchange in electron scattering. It is proposed to measur polarization asymmetry for elastic and inelastic scattering, with a axis normal to the scattering plane.

Measurements and Feasibility:

The experiment requires the scattering of unpolarized electrons from ^3He target. The expected sensitivity is at the 10^{-4} level. The required statistic precisions imply counting rates higher than acceptable by the s acquisition of Hall A, and therefore an integration using segmented pl and a 200 MHz scaler is proposed. Elastic and quasi-elastic kinematics each at two beam energies: 0.845 GeV and 1.645 GeV.

Issues:

The PAC acknowledges the pertinence of the target asymmetry method, which is only sensitive to dispersive effects in the elastic channel, and al invariance violation in the quasi-elastic one. But the goal of 10^{-4} of ac asymmetry seems much too ambitious: it relies mainly on target ch which have been neither designed for such a level of precision, nor st for systematic problems at this level. The PAC has not been convinced that this go is achievable. Moreover, a compelling scientific case for the n measurement was not made.

Recommendation:

Reject

Individual Proposal Reports (Continued)

Proposal: PR-98-103
Spokespersons: J. R. Calarco , H. Gao, and R.D. Ransome
Title: Measurement of $p(\vec{e},e'\vec{p})\phi$ and the Strangeness Content of the Proton

Motivation:

To probe the strange quark content of the proton.

Measurements and Feasibility:

The recoil proton polarization in $p(\vec{e},e'\vec{p})\phi$ will be measured at a sing kinematics where theoretical models of this reaction indicate that it to $s\bar{s}$ pairs in the nucleon. This measurement appears to be possible pr beam current of 50 μA of 80% polarized beam is available.

Issues:

The general approach used in this proposal is interesting; however, th the reaction mechanism $p(\vec{e},e'\vec{p})\phi$ is not well established. Measurements PAC should under several kinematical conditions are necessary to test the theoretical relate the measured recoil proton polarization to the probability singlet $s\bar{s}$ pairs in the proton. In addition, since this reaction is not $s\bar{s}$ pairs (only color singlets), it may not yield a measure of the total of the proton.

Recommendation:
Defer.

Individual Proposal Reports (Continued)

Proposal: PR-98-105
Spokespersons: D. Dale, S. Danagoulian, A. Gasparian, R. Miskima
Title: A Precision Measurement of the Neutral Pion Lifeti via the Primakoff Effect

Motivation:

A measurement of the neutral pion lifetime with 1.8% accuracy is proposed. The measurement would use Primakoff production from tagged photons in Hall B and a hybrid Pb glass calorimeter. One goal of the measureme to test the corrections to the pion lifetime calculated in the chi expected to be at the level of 2%.

Measurements and Feasibility:

A tagged photon beam and a highly segmented calorimeter are important limiting systematic errors. The measurement requires knowledge of the energy to 0.1% and the luminosity to 1%. There are also distortion co give 0.5% to the systematic error.

Issues:

The PAC understands that a measurement as demanding as that proposed require careful attention to detail and an uncompromising approach to the experiment. There was some concern that a full optimization of t has not yet been attained, including the choice of target materials, design, and the influence/importance of collimation of the photon be suggests that the collaboration consider additional studies and possi order to produce a compelling proposal. In particular, the collab address in more detail the following issues:

1. The background rates created upstream of the target, especially due and any collimators.
2. The reliability of the treatment of the pion-nucleus final-state state-of-the-art calculations.

Individual Proposal Reports (Continued)

The PAC considers a high-precision measurement of the pion lifetime with a r significant opportunity for Jefferson Lab. However, to have significant impact provide a useful test of the chiral symmetry breaking corrections, a total error of 1-2.5%, as discussed in the PAC13 report, appears necessary. We encourage the collaboration to continue to pursue this important ex encourage the laboratory to provide needed test beams to further the proposal.

Recommendation:

Defer.

Proposal: PR-98-106
Spokespersons: A. Afanasev, R. Gilman, M. Liang
Title: K^+ Photoproduction and Λ^0 Polarization for $3 < E_\gamma < 6$ GeV

Motivation:

The aim of this proposal is to study reaction mechanisms for $K^+\Lambda^0$ photoproduction in the energy range $3 < E_\gamma < 6$ GeV.

Measurements and Feasibility:

Two Hall A spectrometers would detect the K^+ and the proton (from Λ decay) in coincidence. The circularly polarized Bremsstrahlung photon beam is produced in a 6 from an 80%-polarized, 25-microamp beam. The Bremsstrahlung photo (degraded) electron beam through the 15-cm LH2 target. Data points center-of-mass angles from 30 to 150 degrees at 4 energies (GeV 3 an require separate spectrometer settings. Considerable time is request spectrometer settings and background (Cu radiator out) runs.

Issues:

The PAC does not believe that the physics motivation stated just the spr the run time requested. The PAC believes the physics goals should be a better use of beam time, such as reducing the number of backgrou example, through calibration of the real vs. virtual photon spectra) address these goals. There is some concern that the multiple spectr required may degrade the accuracy of the measurements. We call atte collaboration that there may soon exist data relevant to this proposal

Recommendation:

Defer.

Individual Proposal Reports (Continued)

Proposal: E-98-107
Scientific Rating: B+
Spokespersons: M. Guidal, C. Marchand, and E. Smith
Title: Deeply Virtual Electroproduction of Vector Mesons

Motivation :
Deeply Virtual Compton Scattering (DVCS) accesses off forward parton (OFPD). The second moment of the OFPD gives the total quark contributi the intrinsic orbital and spin) to the nucleon spin. This has consi view of the nucleon spin puzzle. The proposed experiment is not DVCS in the final state. However, recent theoretical developments show tha cross-section for producing a longitudinally polarized rho has dependence and that the amplitudes factorize so that OFPD may be extracted. Thus the proposed experiment has the possibility to allow an analysis ex of the OFPD.

Measurements and Feasibility:
To extract OFPD meaningfully the data must exhibit the behavior predicted by pQCD. The large amount of beam time requested is required by the low high . Longitudinal rhos need to be identified through their de distributions and s-channel helicity conservation (SCHC) needs to be checked. If either of these fail the fundamental aims of extracting OFPD will be

Issues:
The PAC was concerned that the theoretical arguments underpinning the of OFPD in this experiment are only applicable if W is large enough that channel resonances are negligible and (2) that rho production is drive exchange rather than string breaking. These requirements point toward being optimal for the extraction of OFPD though there may be interest in measuri the cross-sections at moderate for developing intuition and confirmation models.

This experiment is speculative but potentially very interesting. If t 6 GeV rather than the currently approved 4 GeV then this experiment wo good add-on. However, this experiment alone should not drive a 6 GeV p

Recommendation:
Conditionally approved for zero incremental time subject to the data at 1 gr at 6 GeV.

Appendix D

Individual Proposal Reports (Continued)

Proposal: E-98-108

Scientific Rating: B+

Spokesperson: O.K. Baker, C.C. Chang, S. Frullani, M. Iodice, P. Markowitz

Title: Electroproduction of Kaons at Q^2 up to 3 (GeV)^2

Motivation:

The main motivation for this experiment resides in the extraction of the kaon form factor at three momentum transfers: 2, (GeV)^2 and 3 (GeV)^2. (This is an update of the conditionally approved experiment 94-108.)

Measurement and Feasibility:

A realistic assessment of errors and a successful determination of L/T in the Hall C experiment were the conditions for approval. In the new proposal, questions raised by the PAC have been answered convincingly, especially due to the successful running of the Hall C experiment, E-93-018.

Issues:

Given the results of E-93-018, the PAC suggests that the group reconsider the chosen kinematical settings. A possible W-dependence of the cross-sections increases the uncertainties for the extraction of the kaon form factor. A different kinematical setting addressing the possible W-dependence should be considered over the momentum transfer setting (GeV)^2 2.5. The PAC considers optimization of the extrapolation to the kaon pole to be the more important goal with proper kinematics.

Recommendation:

Approved for 21 days.

Individual Proposal Reports (Continued)

Proposal: E-98-109
Scientific Rating: B+
Spokesperson(s): P. L. Cole, J.A. Mueller, D.J. Tedeschi
Title: Photoproduction of ϕ Mesons with Linearly Polarized Pho

Motivation:

This proposal is an update of PR-97-005 which addresses the nature meson-nucleon interaction.

Measurement:

The experiment measures the photoproduction of ϕ mesons from the proton by usin a linearly polarized beam of photons together with the $\phi \to K^+K^-$ decay distribution. The combination of the linearly polarized photons and CLAS is well matched to determine 9 of the 11 density matrix elements.

Issues:

PAC12 conditionally approved the experiment calling for an integrat coordinated with other linear polarized photon-vector meson production This update provides the requested cohesive run plan sharing with the bea approved experiment 94-109 (the photoproduction of ρ mesons from the proton with linearly polarized photons). A convincing case was not made for the r 4 GeV.

Recommendation:

Approval for 13 days at 6 GeV.

Appendix E

Individual Letter-of-Intent Reports

Letter-of-Intent: LOI-98-102
Spokesperson: P. Markowitz
Title: Kaon Electroproduction via the $^{3}\vec{H}\vec{e}(\vec{e},e'\vec{K}^{+})$ Reaction

This letter outlines a clever use of spin observables to study hyperon mass 3 system. As outlined, strong spin-dependent effects are expected transfer in electroproduction is large and final state interactions between the nucleon pair are substantial. Currently approved experiment 98-10 polarization transfer in production on the proton and experiment will 91-013 measure the excitation spectrum in the system. The PAC recommends that a proposal to study spin observables in the mass 3 system be develop implications of these experiments can be taken into account.

Letter of Intent: LOI-98-103
Spokesperson(s): L. Kramer
Title: Phi Vector Meson Electroproduction via the ^{1}H (e,e'p)phi Reaction

The PAC feels that it is important to understand the phi-meson ph electroproduction mechanisms at CEBAF energies. Experiments pursuing s of this goal are already approved for Hall B. In order for the PAC to commend for a supplementary program in Hall A, a proposal would have to spell sharply how the proposed measurements complement those in Hall B in sensitivity to specific aspects of the reaction mechanisms. Toward combination of polarization and cross-section measurements might be proposal would also have to demonstrate that backgrounds under the ph manageable at all the proposed kinematic settings.

Appendix F

PACs 4–14 Grouped by Physics Category

To access Appendix F (titled Experiment Summar
http://www.jlab.org/exp_prog/PACpage/

in your web browser.

Appendix F includes a list of experiments organized by physics c
including rating, hall, spokesperson(s), etc.