

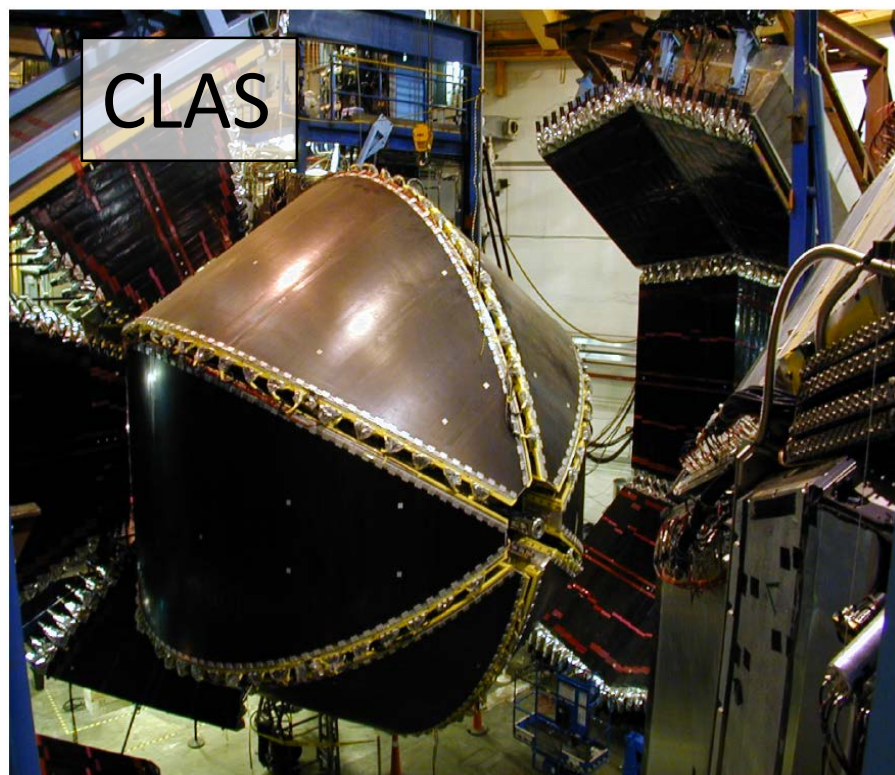
# CLAS Collaboration Meeting

Kyungseon JOO  
for the CLAS Collaboration

November 12-15, 2019



# CLAS and CLAS12



# Hall B Management

- In mid-September, Volker Burkert officially passed Hall B leadership to the next hall leader after ~16 years of excellent leadership and service.
- Volker Burkert was named Virginia Outstanding Scientist for 2019.
- New Hall-B Leader: Marco Battaglieri.



# CLAS Collaboration

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- Hall B Leader: Marco Battaglieri
- CLAS Collaboration Chair: Kyungseon Joo
- Physics Working Groups
  - Deep process physics working group: Marco Contalbrigo
  - Hadron Spectroscopy: Bryan McKinnon
  - Nuclear Physics: Lamiaa El Fassi
  - Software: Raffaella De Vita
- Committees
  - Membership Committee: Bryan McKinnon
  - Service Work Committee: Silvia Niccolai
  - CLAS Speakers Committee: Nicholas Zachariou

**Thank Mike, Marco, Lamiaa for their excellent services.**

# The CLAS Collaboration

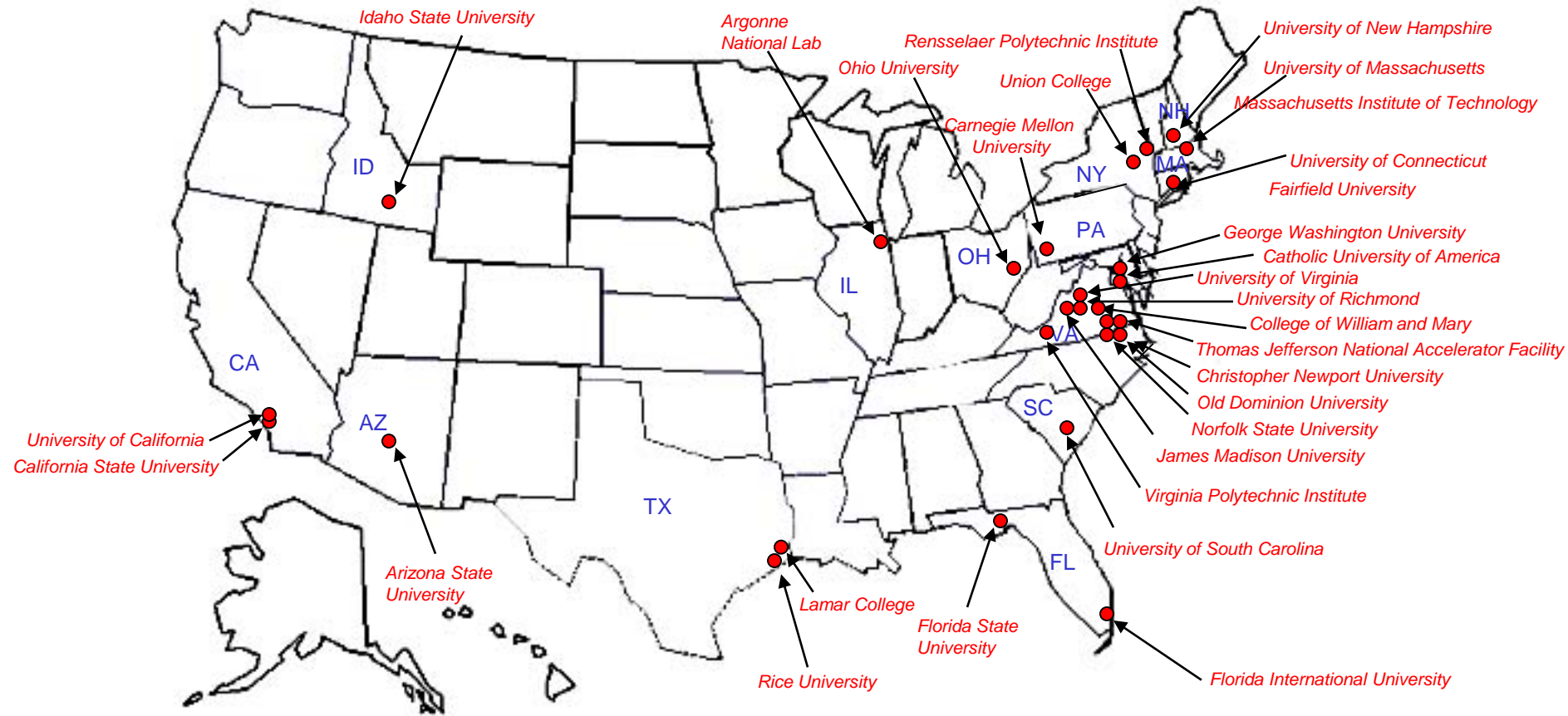


Argonne National Lab, Chicago, IL  
Arizona State University, Tempe, AZ  
University of California, Los Angeles, CA  
California State University, Dominguez Hills, CA  
Canisius College, Buffalo, NY  
Carnegie Mellon University, Pittsburgh, PA  
Catholic University of America  
CEA-Saclay, Gif-sur-Yvette, France  
Christopher Newport University, Newport News, VA  
University of Connecticut, Storrs, CT  
Edinburgh University, Edinburgh, UK  
Fairfield University, Fairfield, CT  
Florida International University, Miami, FL  
Florida State University, Tallahassee, FL

George Washington University, Washington, DC  
University of Glasgow, Glasgow, UK  
Idaho State University, Pocatello, Idaho  
INFN, Laboratori Nazionali di Frascati, Frascati, Italy  
INFN, Sezione di Genova, Genova, Italy  
INFN, Sezione di Ferrara, Ferrara, Italy  
INFN, Roma Tor Vergata, Rome, Italy  
Institut de Physique Nucléaire, Orsay, France  
ITEP, Moscow, Russia  
James Madison University, Harrisonburg, VA  
Kyungpook University, Daegu, South Korea  
University of Massachusetts, Amherst, MA  
Moscow State University, Moscow, Russia  
University of New Hampshire, Durham, NH  
Norfolk State University, Norfolk, VA

Ohio University, Athens, OH  
Old Dominion University, Norfolk, VA  
Rensselaer Polytechnic Institute, Troy, NY  
University of Richmond, Richmond, VA  
University of South Carolina, Columbia, SC  
Universidad Tecnica Federico Santa Maria, Chile  
Thomas Jefferson National Accelerator Facility, Newport News, VA  
Virginia Polytechnic Institute, Blacksburg, VA  
University of Virginia, Charlottesville, VA  
College of William and Mary, Williamsburg, VA  
Yerevan Institute of Physics, Yerevan, Armenia  
Brazil, Germany, Morocco and Ukraine,  
as well as other institutions in France and in the USA,  
have individuals or groups involved with CLAS,  
but with no formal collaboration at this stage.

# CLAS Collaboration - US Institutions



# New CLAS Papers

3 new papers accepted by the target journal since last Collaboration Meeting

Paper ID	Paper Title	Lead Author	Contact Person	Target Journal
2019-1	Exclusive $\pi^0 p$ electroproduction off protons in the resonance region at photon virtualities $0.4 \text{ GeV}^2 \leq Q^2 \leq 1 \text{ GeV}^2$	Markov	Accepted	PRC
2018-13	Measurement of Nuclear Transparency Ratios for Protons and Neutrons	Deur	Accepted	PRL
2018-12	First Measurements of the Double-Polarization Observables F, P, and H in omega Photoproduction on Transversely-Polarized Protons in the $N^*$ Resonance Region	Roy	Accepted	PRL

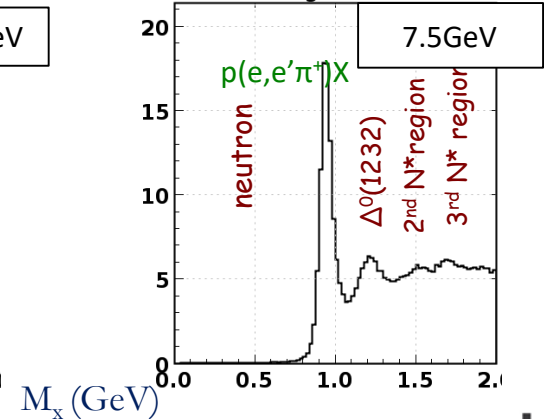
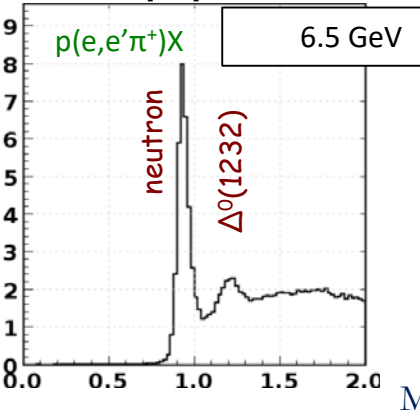
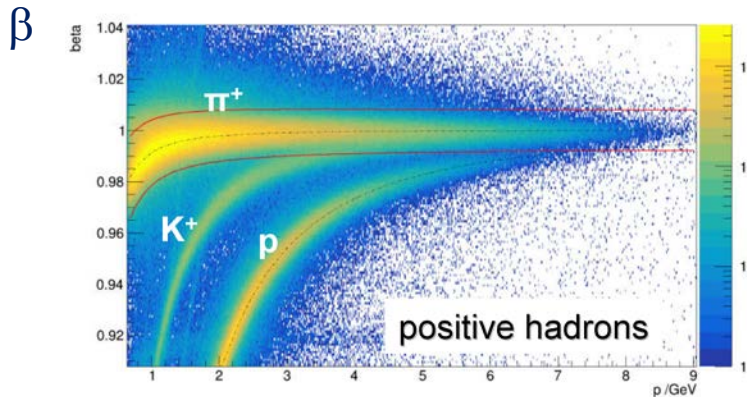
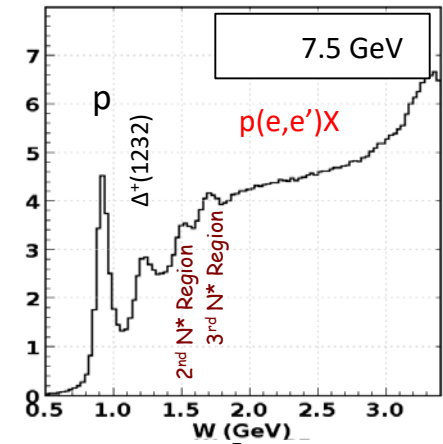
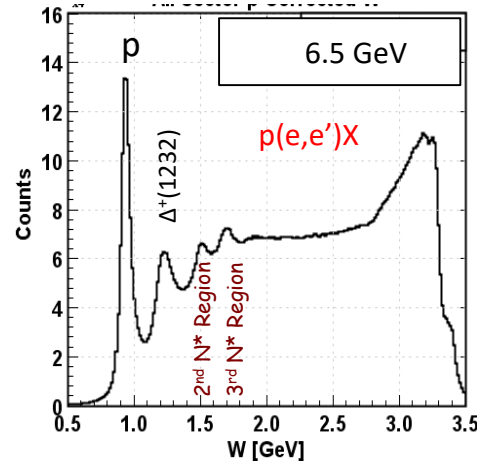
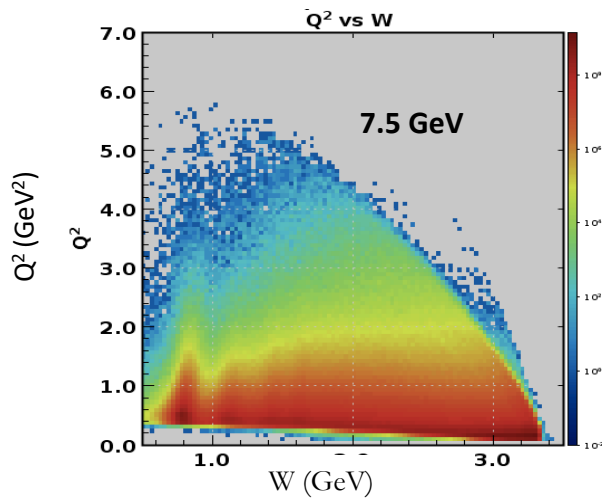
# PAC47

- PAC meeting on July 29 – August 2, 2019
- CLAS12:
  - One proposal requesting new beam time was deferred:  
H. Gao et al, “Search for a  $\phi$  – N Bound State from  $\phi$  Production in a Nuclear Medium”
- Two run-group additions were endorsed:
  - RG-B, F. Hauenstein et al., “Quasi-real Photoproduction of Hadrons on Deuterium”
  - RG-F (BONUS12), M. Hattawy et al., “Tagged Neutron DVCS with BONuS12 in CLAS12”



# Data processing for DNP 2019 meeting

- Data processing of about 5% of RG-A/K/B data
- Significant improvements in reconstruction accuracy, resolutions and PIDs

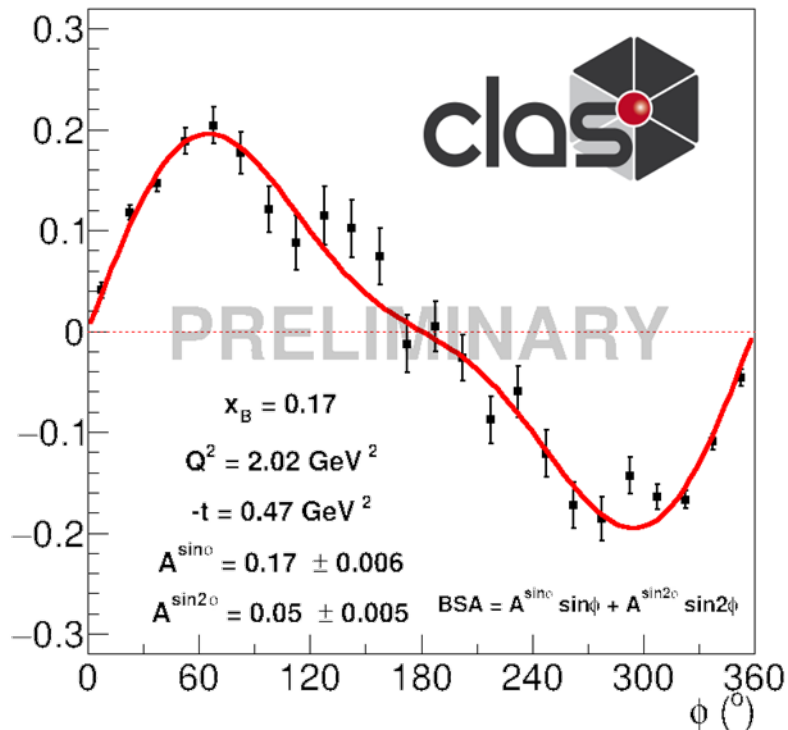


# Data processing and DNP Presentations

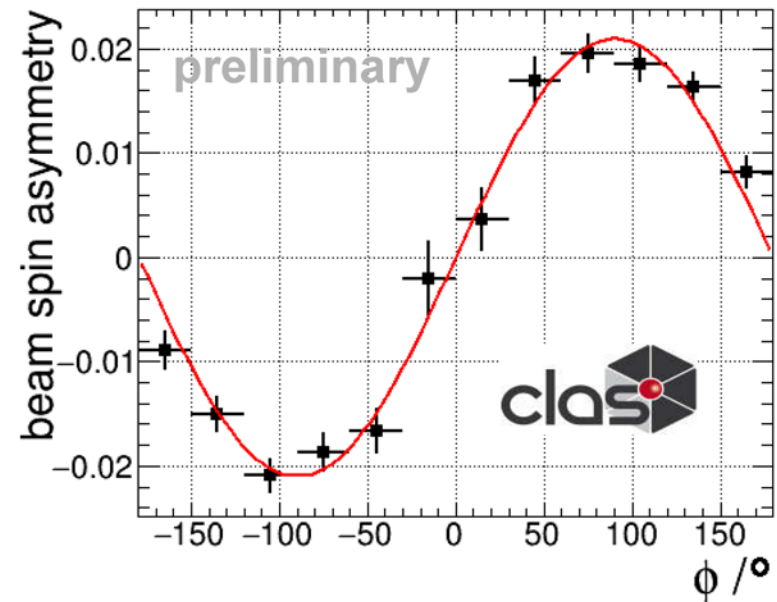
- 36 presentations on CLAS12 and CLAS6 at 2019 APS-DNP meeting
  - High potential and high impact CLAS12 data

$E_b = 10.6 \text{ GeV}$

DVCS raw BSA



SIDIS BSA  $\pi^+$



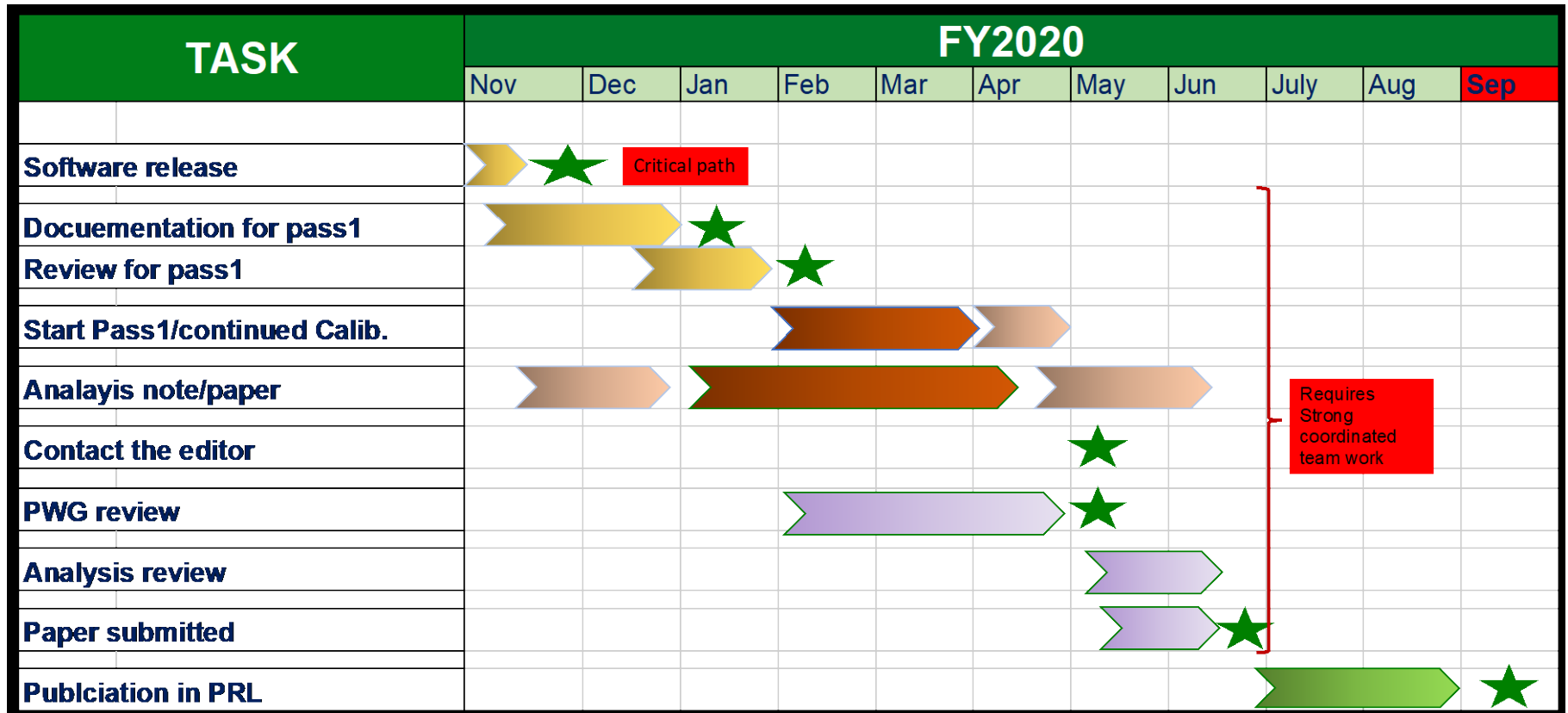
# Analysis task for First Publication

L. Elouadrhiri

Pass0 for Fall run, RGK 6.5 GeV, 7.5 GeV and Spring 10.2 GeV
Experiment configuration for each period detector geometry position etc.
Beam energy
Beam position as function of time
Polarization measurement results
Helicity information monitoring file/by file
Faraday Cup information monitoring
Trigger/trigger efficiency
Target density
Prioritize/calibrate/pass0s/monitoring/
Pass1 production run & calibration/special runs
Golden run selection grouped by trigger & beam current for final analysis
Tracking efficiency
Radiative corrections
PID efficiency
Fiducial cuts
Kinematical corrections and momentum corrections
Elastic analysis as monitoring reaction
Inclusive analysis as monitoring reactions
Cross checks with simulations
Cross checks with different run periods, RGK and previous CLAS data
<b>Others...</b>

Good documentation should be produced at each level.

# RG-A First Publication



# Improvements needed

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To carry out the highest quality scientific program with CLAS12

- Tracking accuracy and resolutions
- Efficiencies
- Magnetic field
- Alignments
- Particle identifications (PIDs)
- Momentum corrections
- Kinematic fitter
- Simulations
- Offsite Computing
- Others

# Agenda

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- Tuesday morning talks dedicated to Hall B, Lab and Accelerator status.
- Special seminar by Barbara Jacak (LBNL) this morning.
- Software session this afternoon
- Wednesday morning talks dedicated to Run Group reports.
- Wednesday afternoon talks dedicated to CLAS12 subsystem reports.
- Physics WG parallel session and Joint session on CLAS12 analysis on Thursday
- Three physics talks (Kubarovsky, Richards, Crede) and business talks on Friday morning.
- Software workshop on Friday afternoon
- Student and post-doc lunch meeting today (L102-L04)
- CLAS Speaker Committee Meeting over lunch break today (Tuesday)
- Membership Committee meeting over lunch break tomorrow (Wednesday)
- Reception tonight!
- Barbecue on Thursday evening at RESFAC!

# Summary

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Let's get them published!



Tuesday, November 12, 2019

